



FIG. 1

PRIOR ART
 OVER THE AIR
 BROADCAST SPECTRUM

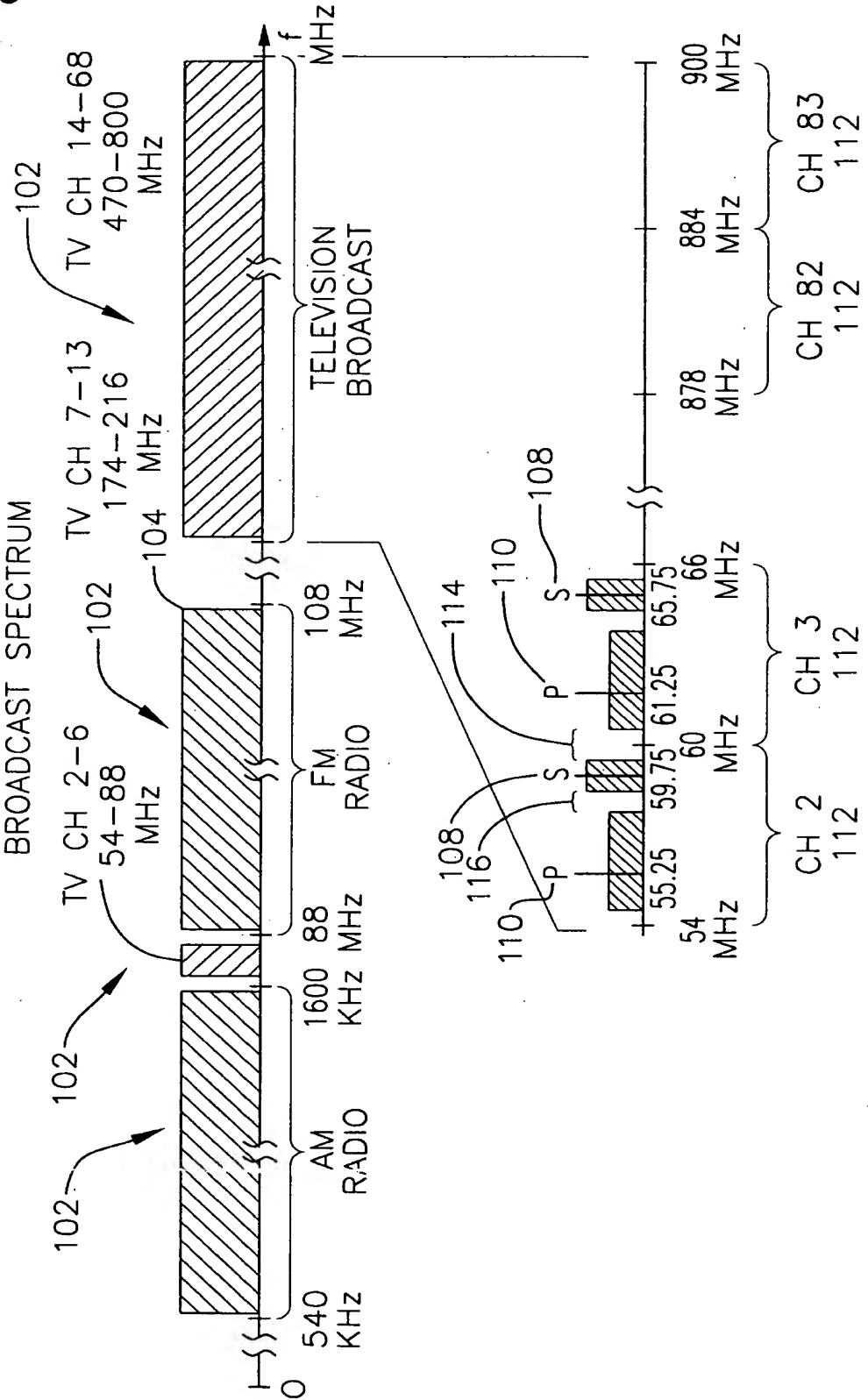




FIG. 2

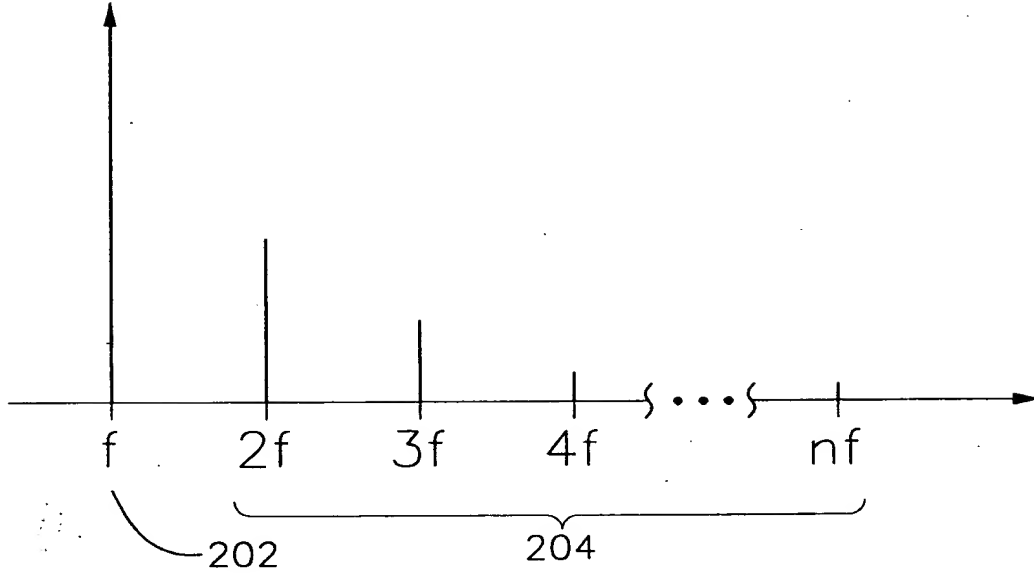


FIG. 3

PRIOR ART

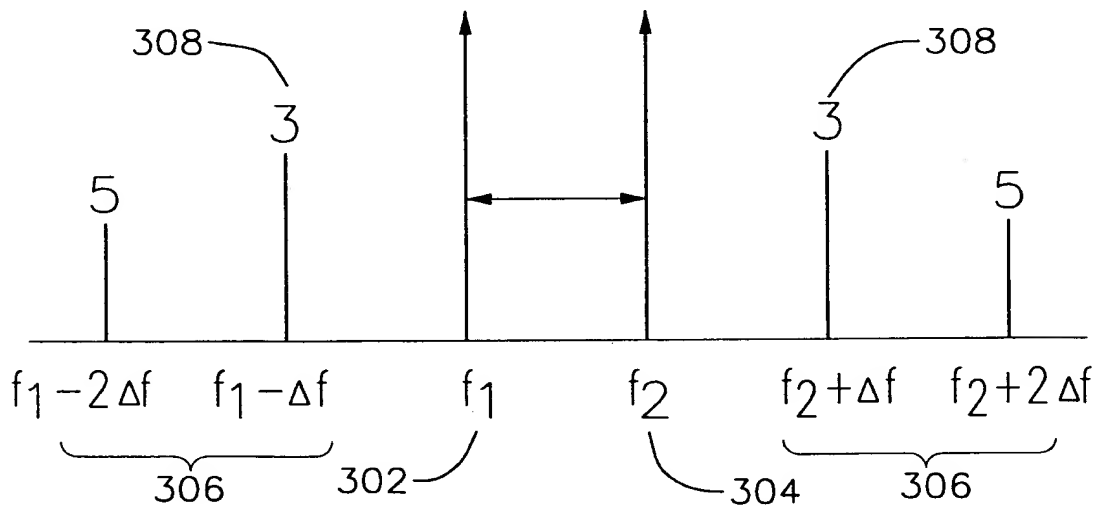




FIG. 4
 PRIOR ART

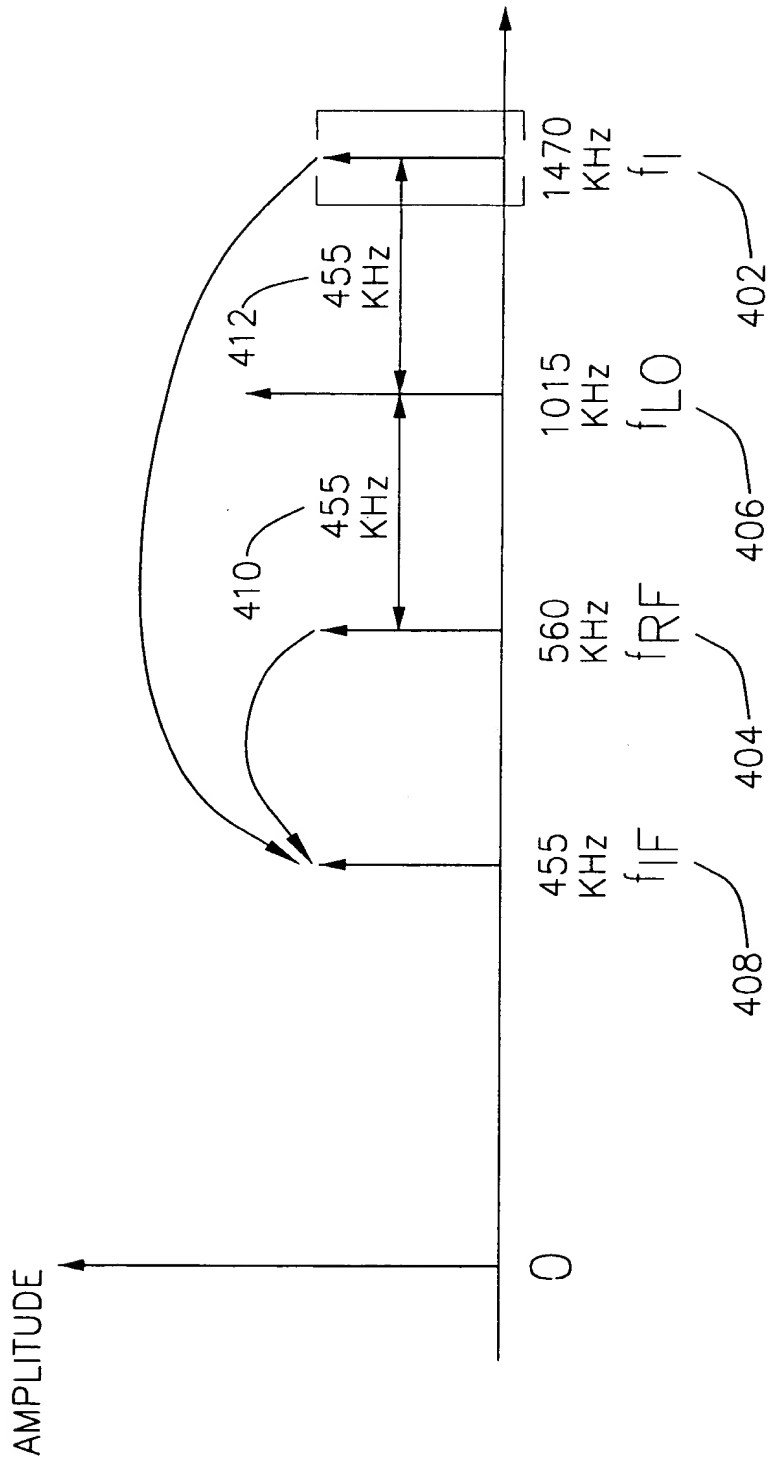




FIG. 5
 DUAL CONVERSION RECEIVER

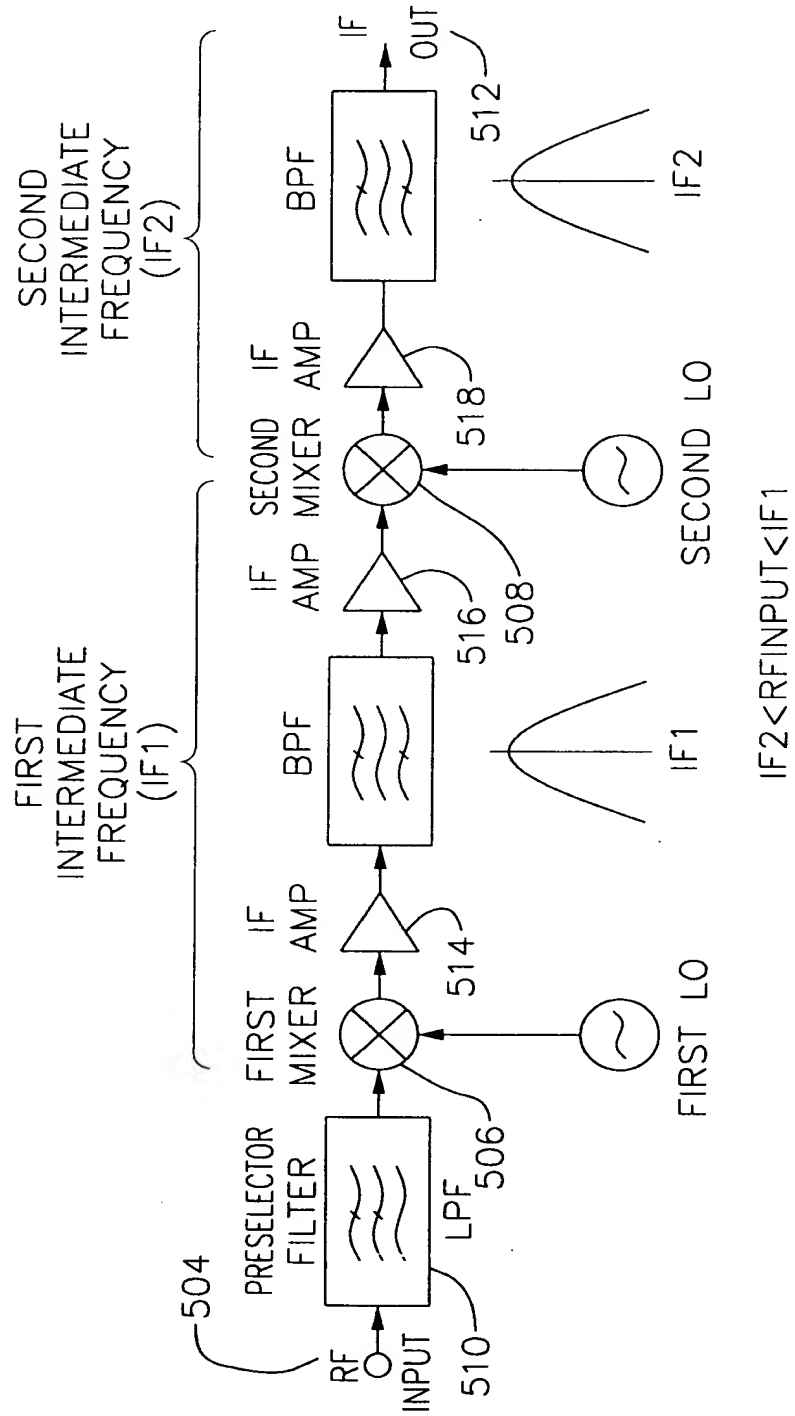




FIG. 6

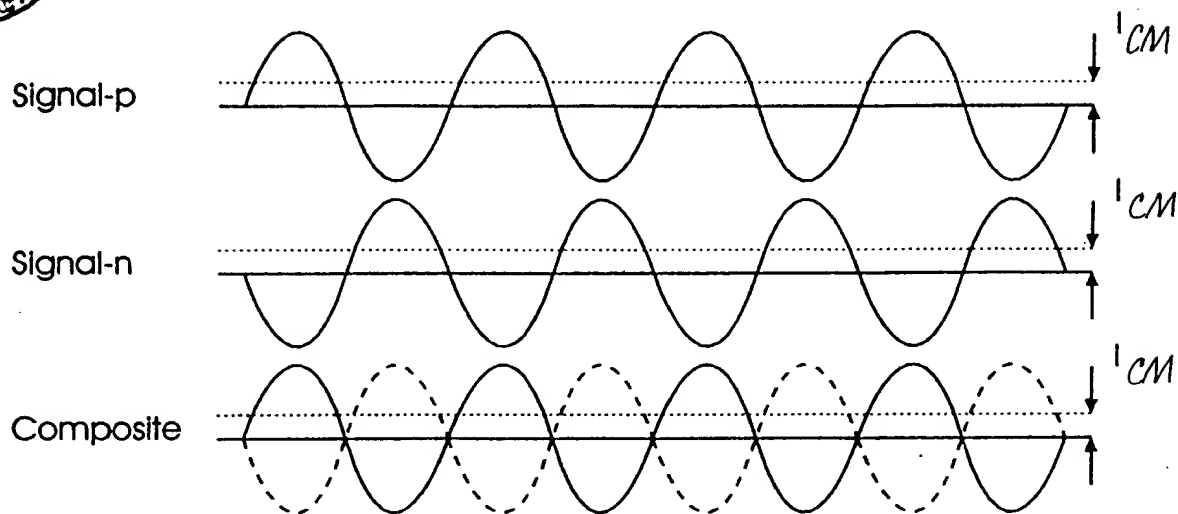


FIG. 7

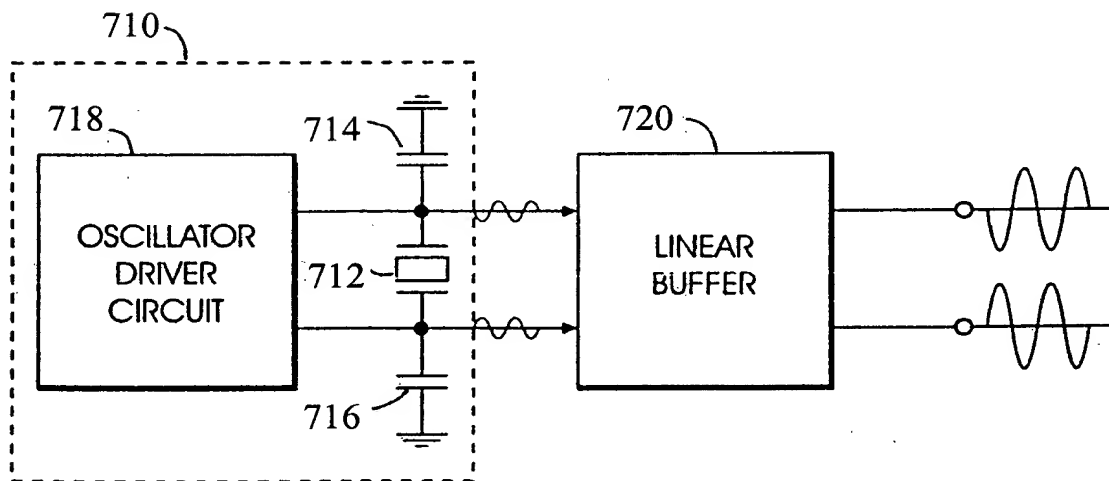




FIG. 8

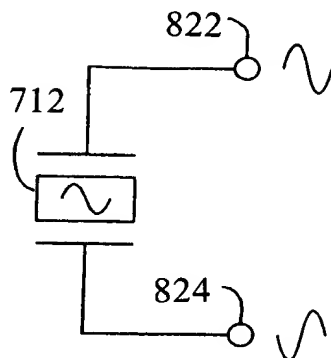


FIG. 9

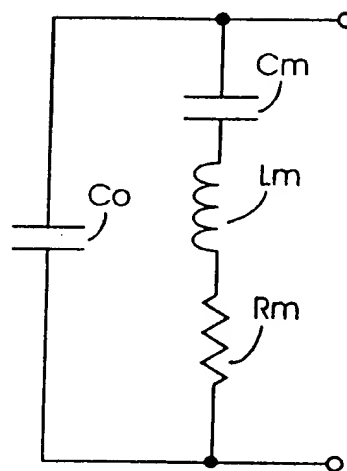


FIG. 10

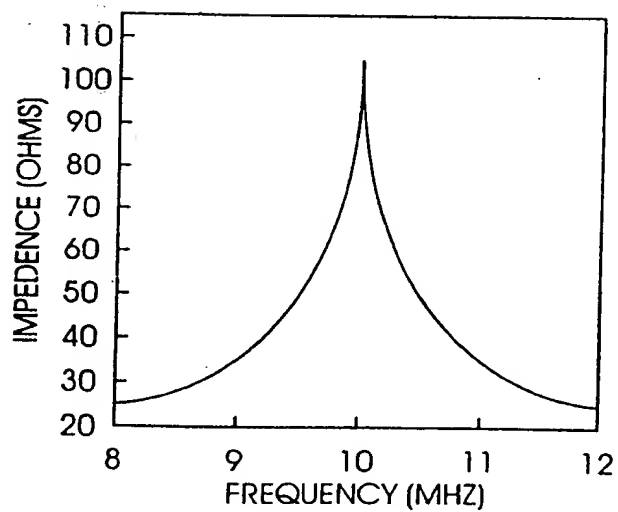
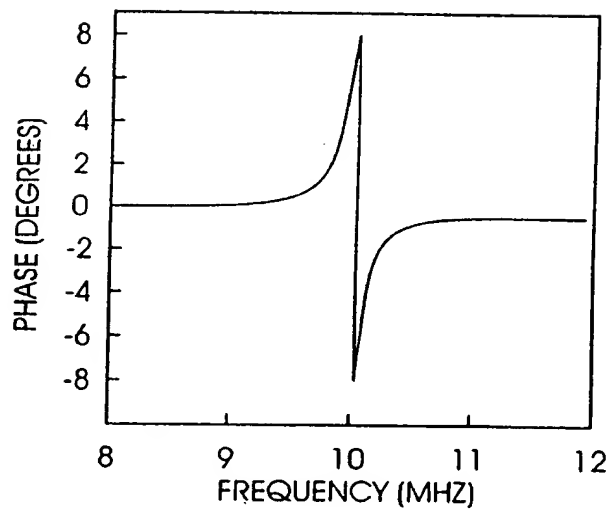


FIG. 11



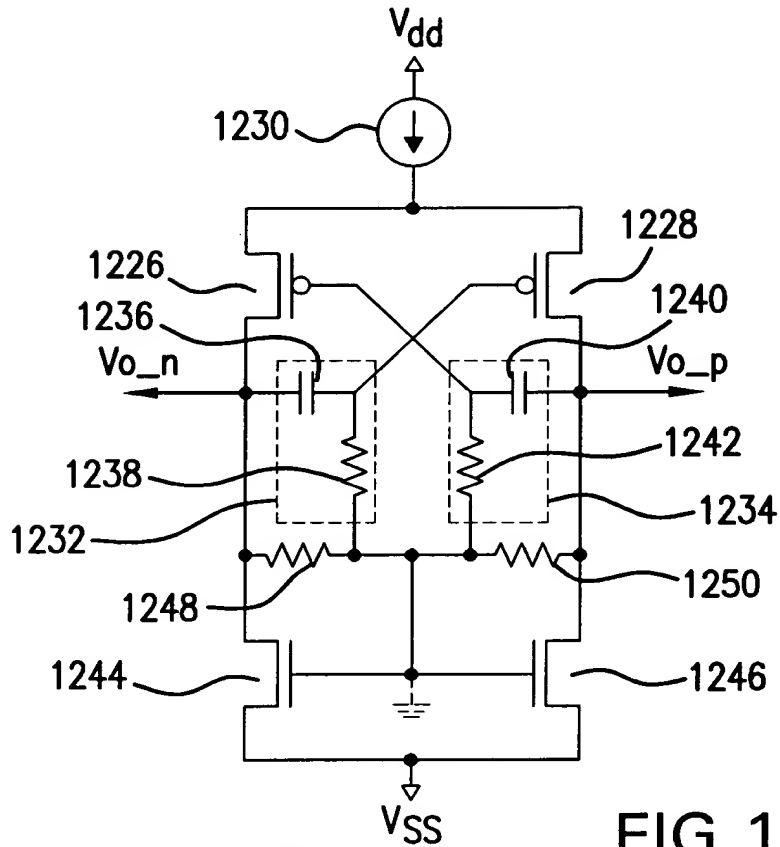


FIG. 12 is a block diagram of a multi-channel oscillator system. An OSCILLATOR DRIVER (718) is connected to a network of components (712, 720) which feeds into three parallel channels. Each channel consists of a gain block (K), a variable gain amplifier (1352, 1354, 1356), and a load block (1358, 1360, 1362).

FIG. 13



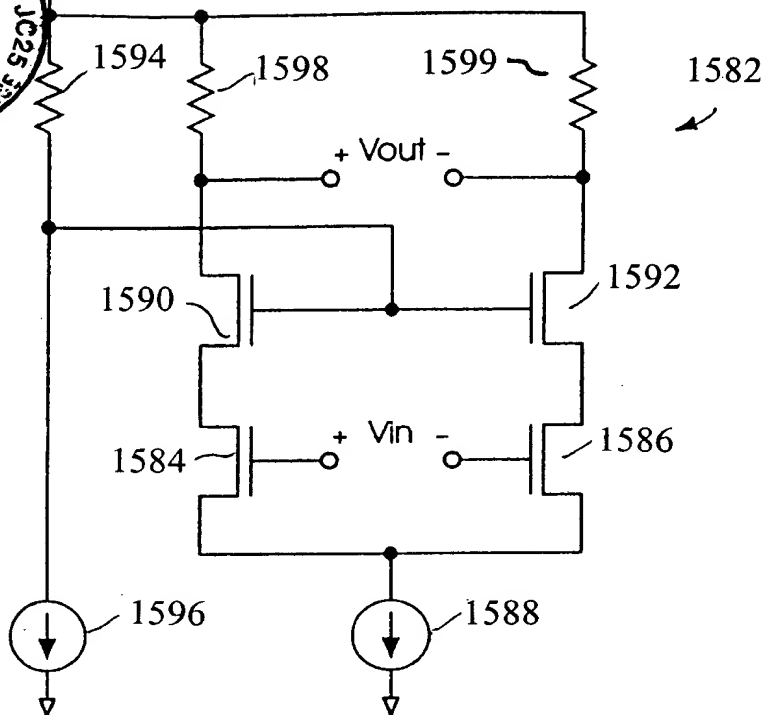
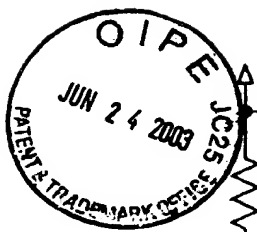


FIG. 15

FIG. 16

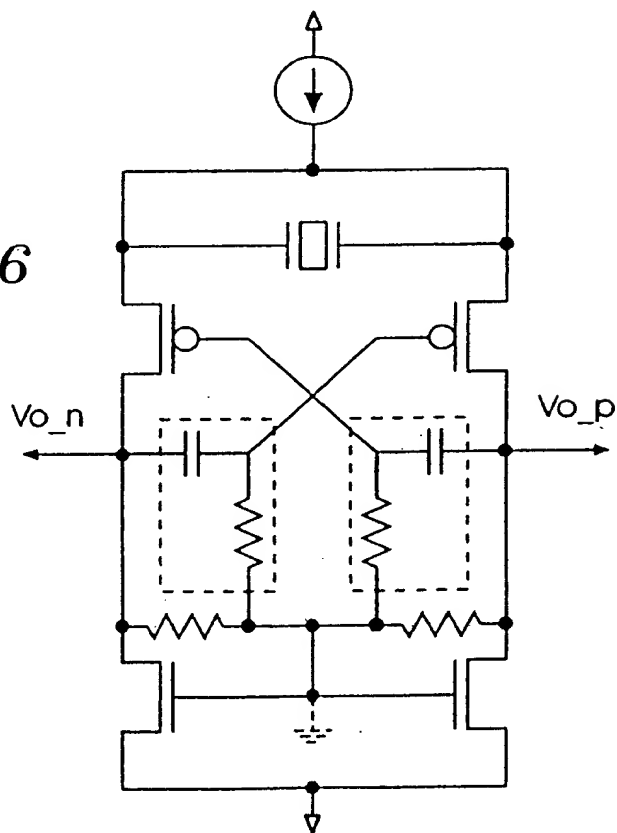




FIG. 17

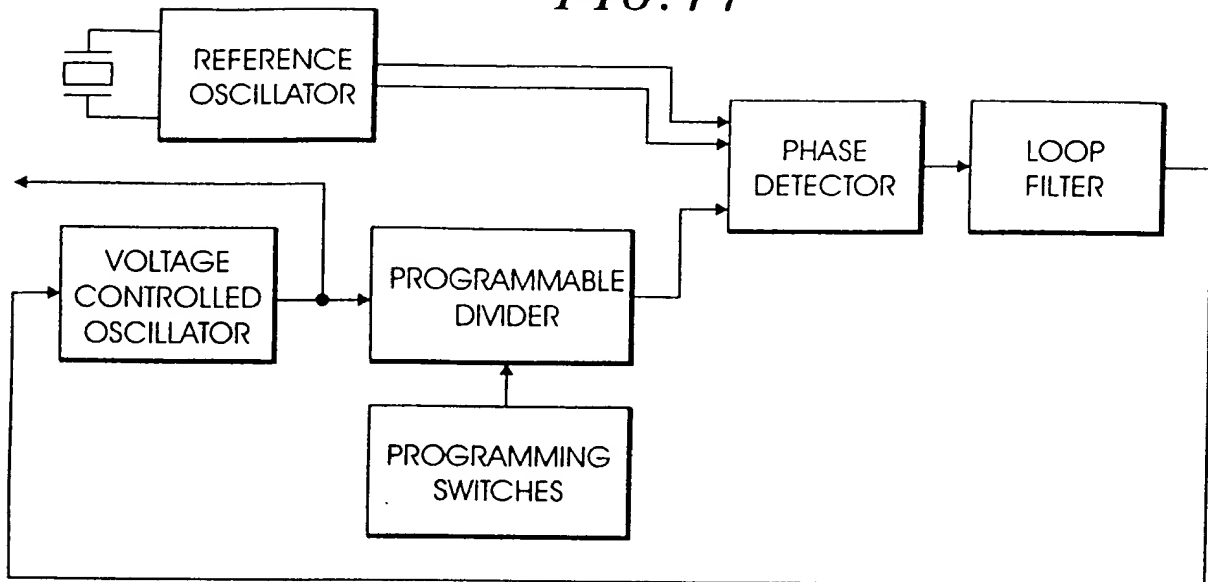


FIG. 18

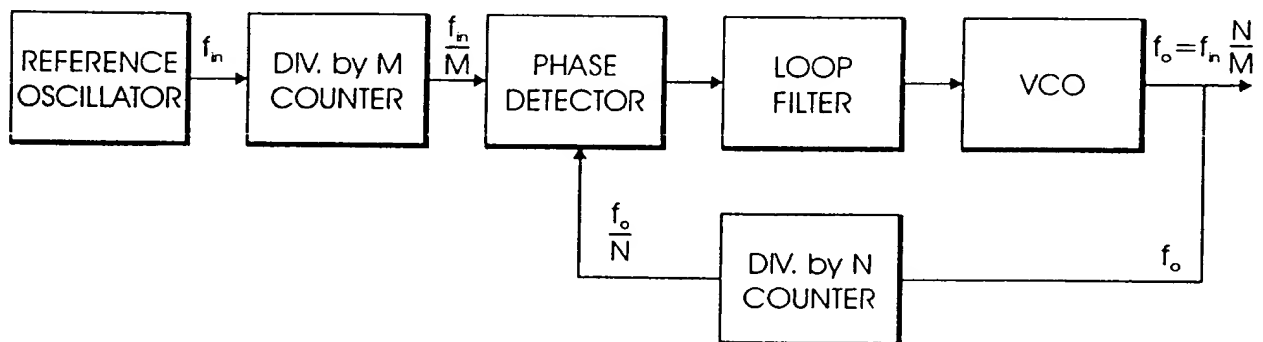


FIG. 19

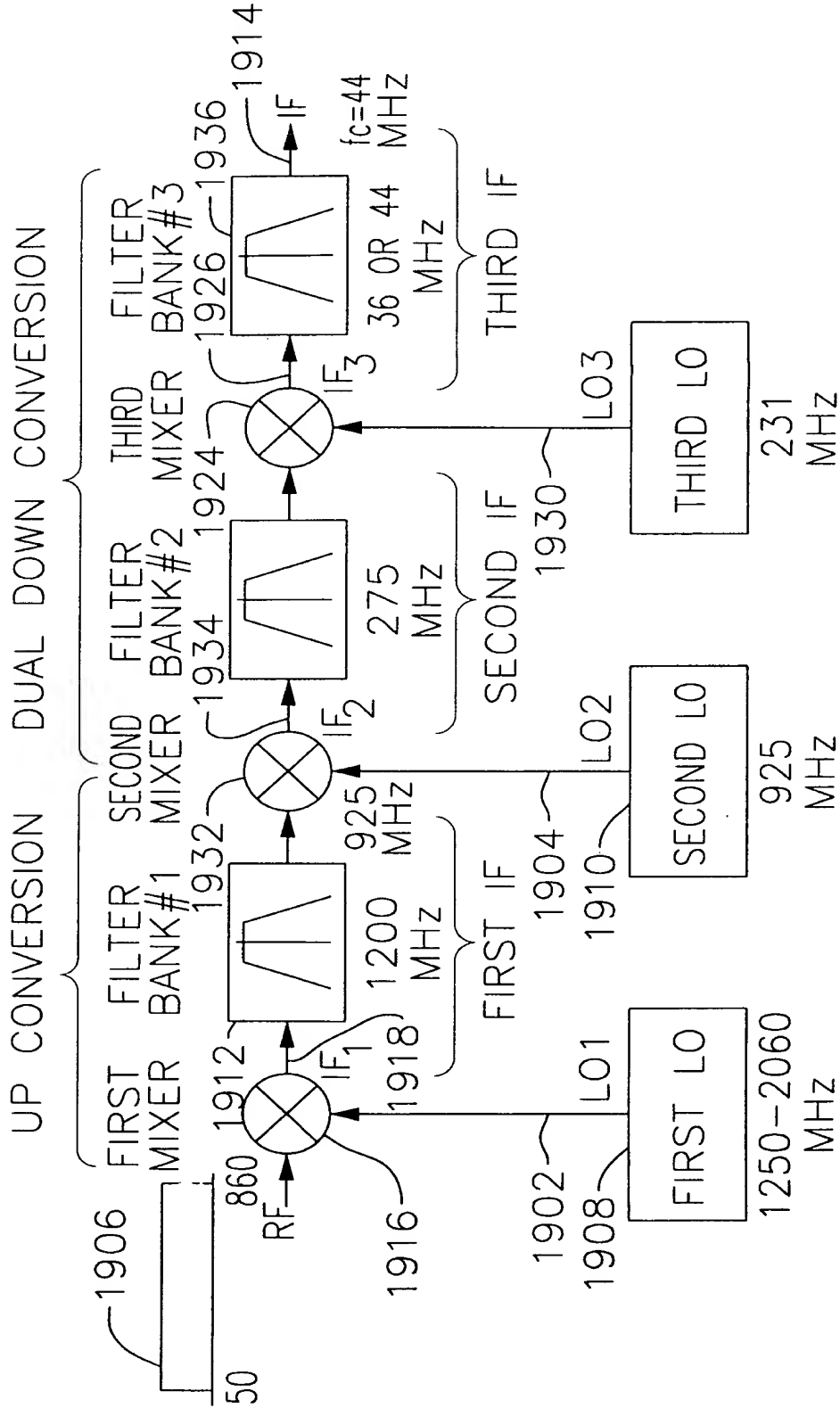




FIG. 20

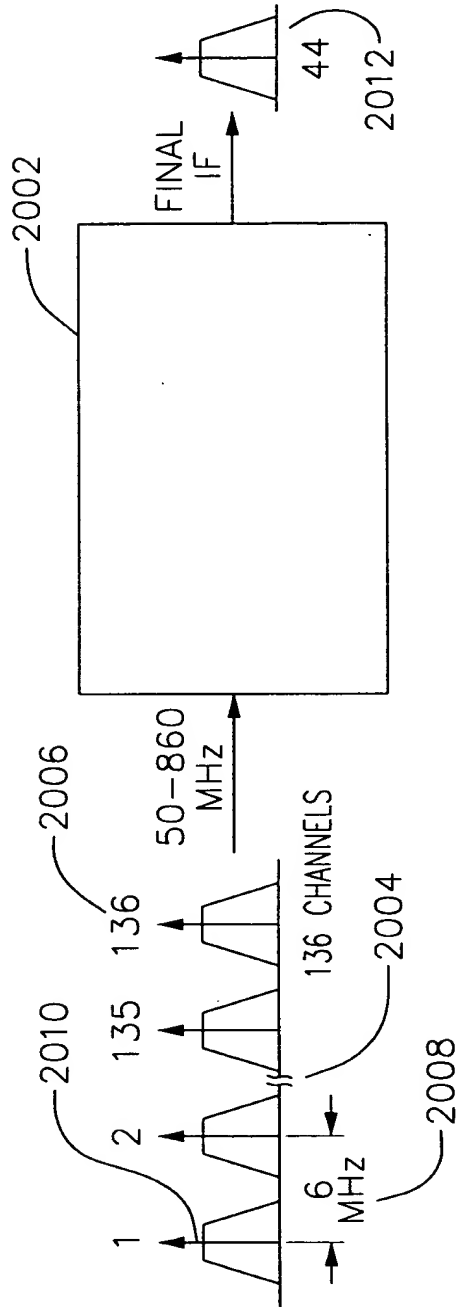




FIG. 21

PPL XtoI REFERENCE=10MHz
LO-1, 10MHz FREQUENCY STEPS
LO-2, 100kHz FREQUENCY STEPS

44MHz IF

NOTE
• LO-2 REF=100KHz,
SO DIVIDE RANGE=9216 TO 9280

TABLE OF FREQUENCIES BASED ON
COARSE/FINE PLL SOLUTION:

Frq (MHz)	50	56	62	68	74	80	86	92	98	104	110	116	122	128	"	854	860
LO-1(MHz)	1250	1260	1260	1270	1270	1280	1290	1290	1300	1300	1310	1320	1320	1330	"	2050	2060
IF-1 (MHz)	1200	1204	1198	1202	1196	1200	1204	1198	1202	1196	1200	1204	1198	1202	"	1196	1200
LO-2(MHz)	924.8	928.0	923.2	926.4	921.6	924.8	928.0	923.2	926.4	921.6	924.8	928.0	923.2	926.4	"	921.6	924.8
IF-2(MHz)	275.2	276.0	274.8	275.6	274.4	275.2	276.0	274.8	275.6	274.4	275.2	276.0	274.8	275.6	"	274.4	275.2
LO-3(MHz)	231.2	232	230.8	232	230	231	232	231	232	230	231	232	231	232	"	230	231
IF-3(MHz)	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	44.0	"	44.0	44.0

2102



FIG. 22

PPL Xtal REFERENCE=10MHz
 LO-1, 10MHz FREQUENCY STEPS
 LO-2, 100kHz FREQUENCY STEPS

36MHz IF

NOTE
 • LO-2 REF=100KHz,
 SO DIVIDE RANGE=9280 TO 9340

TABLE OF FREQUENCIES BASED ON
 COARSE/FINE PLL SOLUTION:

Frf (MHz)	50	58	66	74	82	90	98	106	114	122	130	138	146	154	"	852	860
LO-1(MHz)	1250	1260	1270	1270	1280	1290	1300	1310	1310	1320	1330	1340	1350	1350	"	2050	2060
IF-1 (MHz)	1200	1202	1204	1196	1198	1200	1202	1204	1196	1198	1200	1202	1204	1196	"	1198	1200
LO-2(MHz)	931.2	932.8	934.4	928.0	930	931	933	934	928.0	930	931	933	934	928.0	"	929.60	931.2
IF-2(MHz)	268.8	269.2	269.6	268.0	268.4	268.8	269.2	269.6	268.0	268.4	268.8	269.2	269.6	268.0	"	268.4	268.8
LO-3(MHz)	232.8	233.2	233.6	232	232	233	233	234	232	232	233	233	234	232.0	"	232.4	232.8
IF-3(MHz)	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	"	36.0	36.0

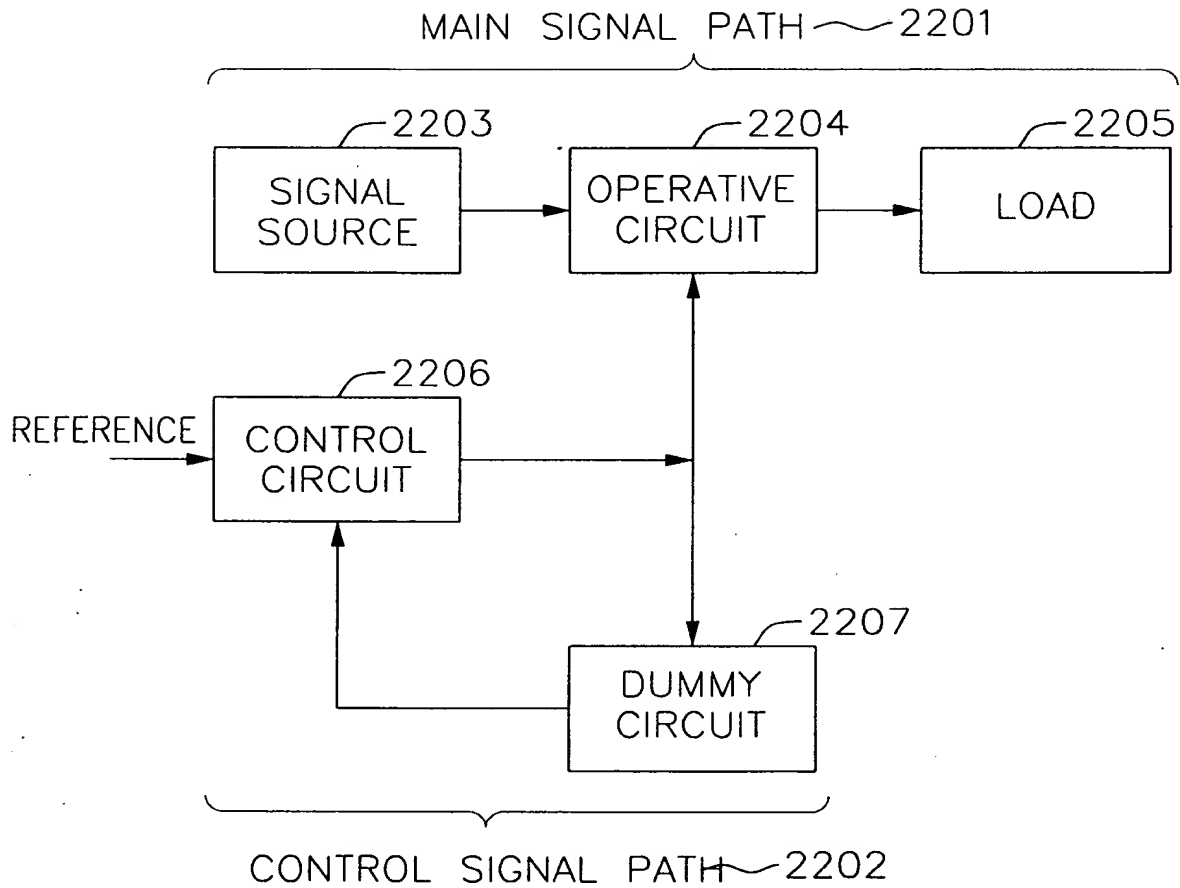
*FIG. 23*



FIG. 24a

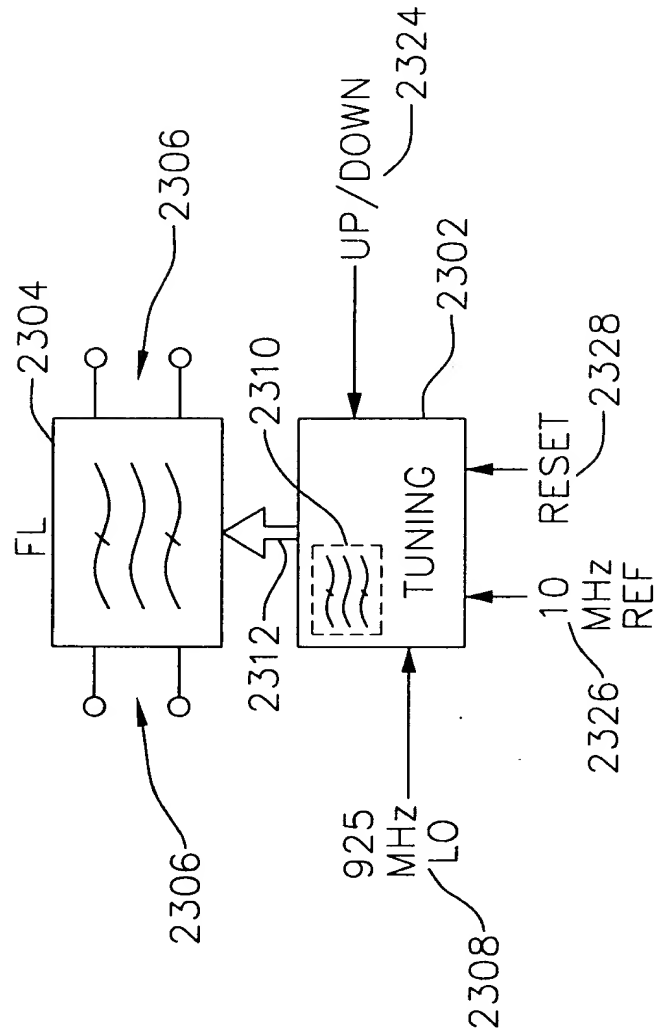




FIG. 24b

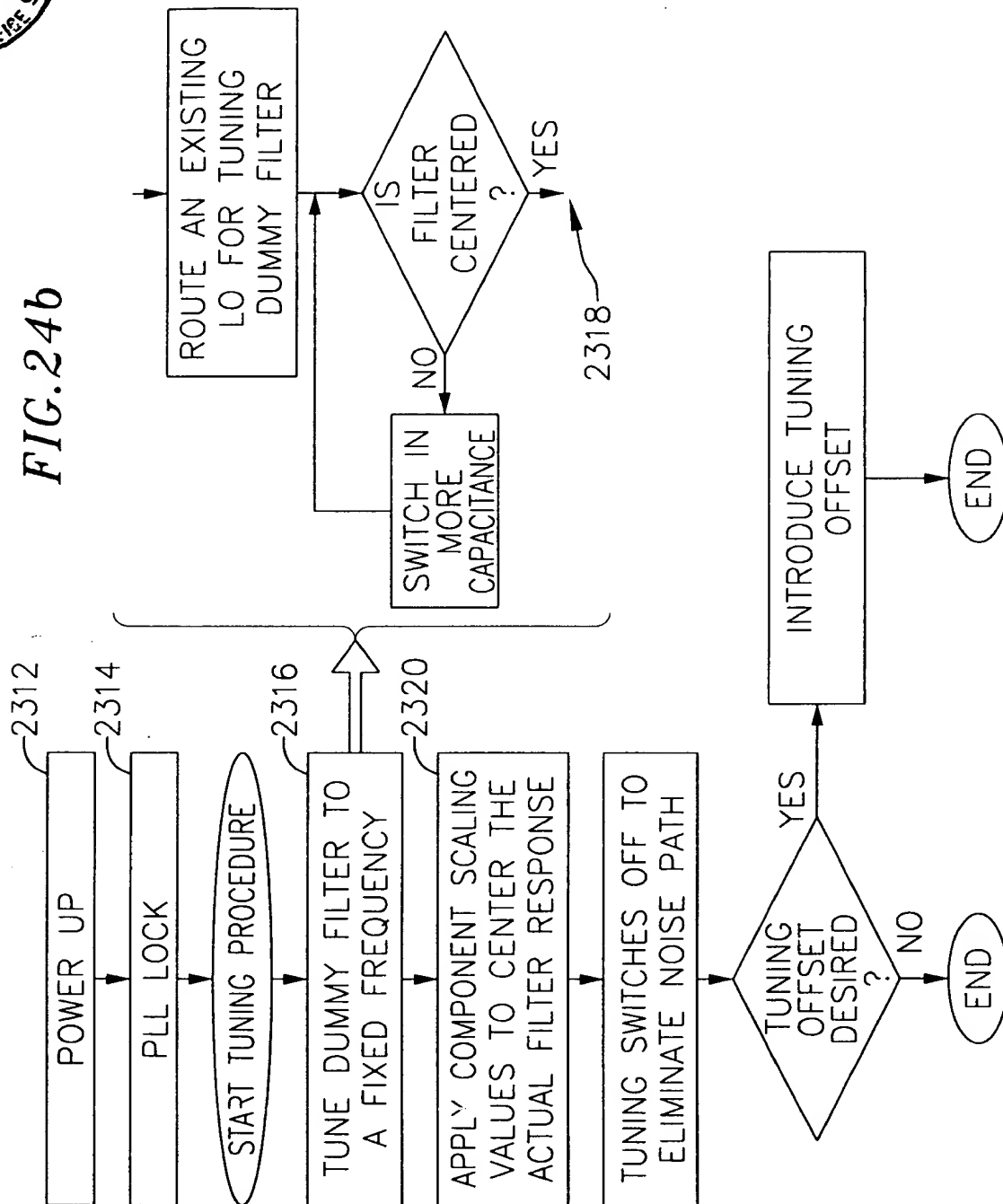




FIG. 24c

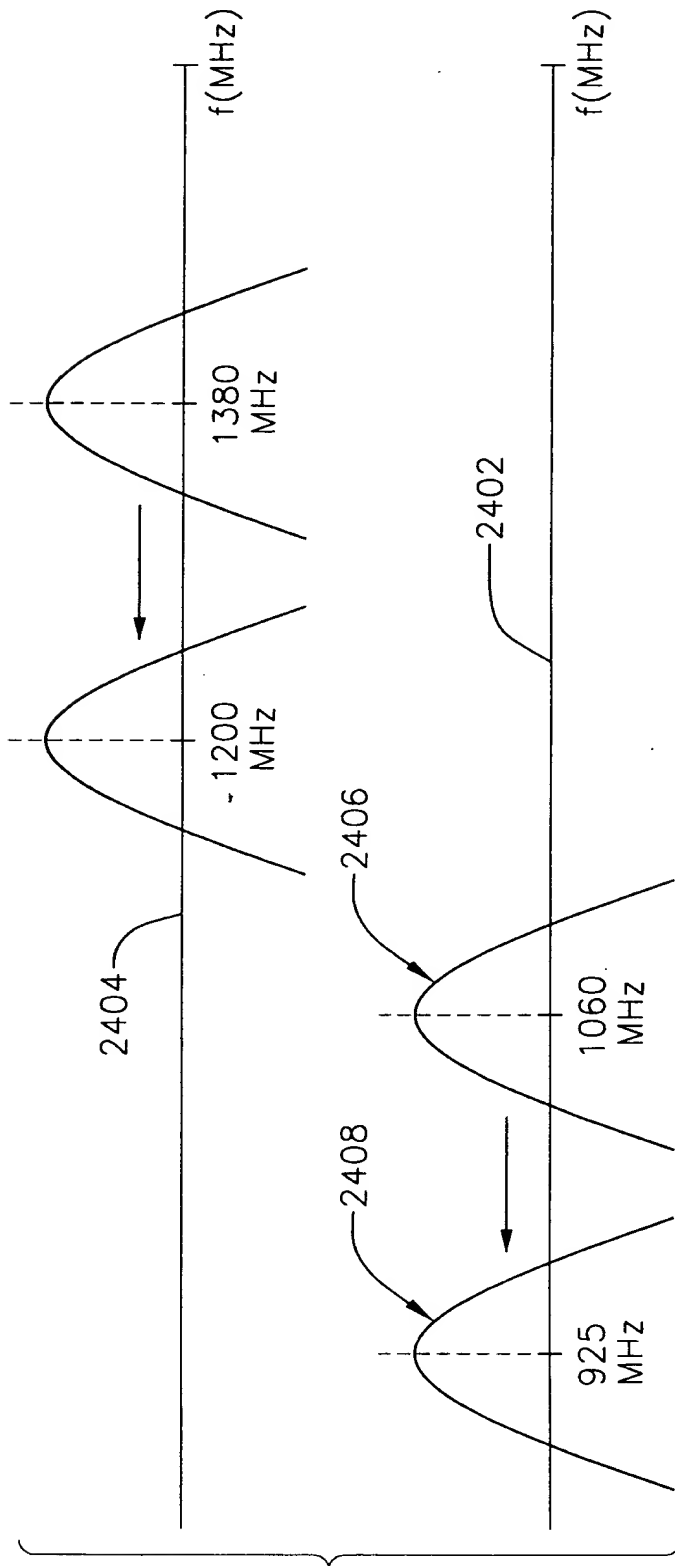




FIG. 25

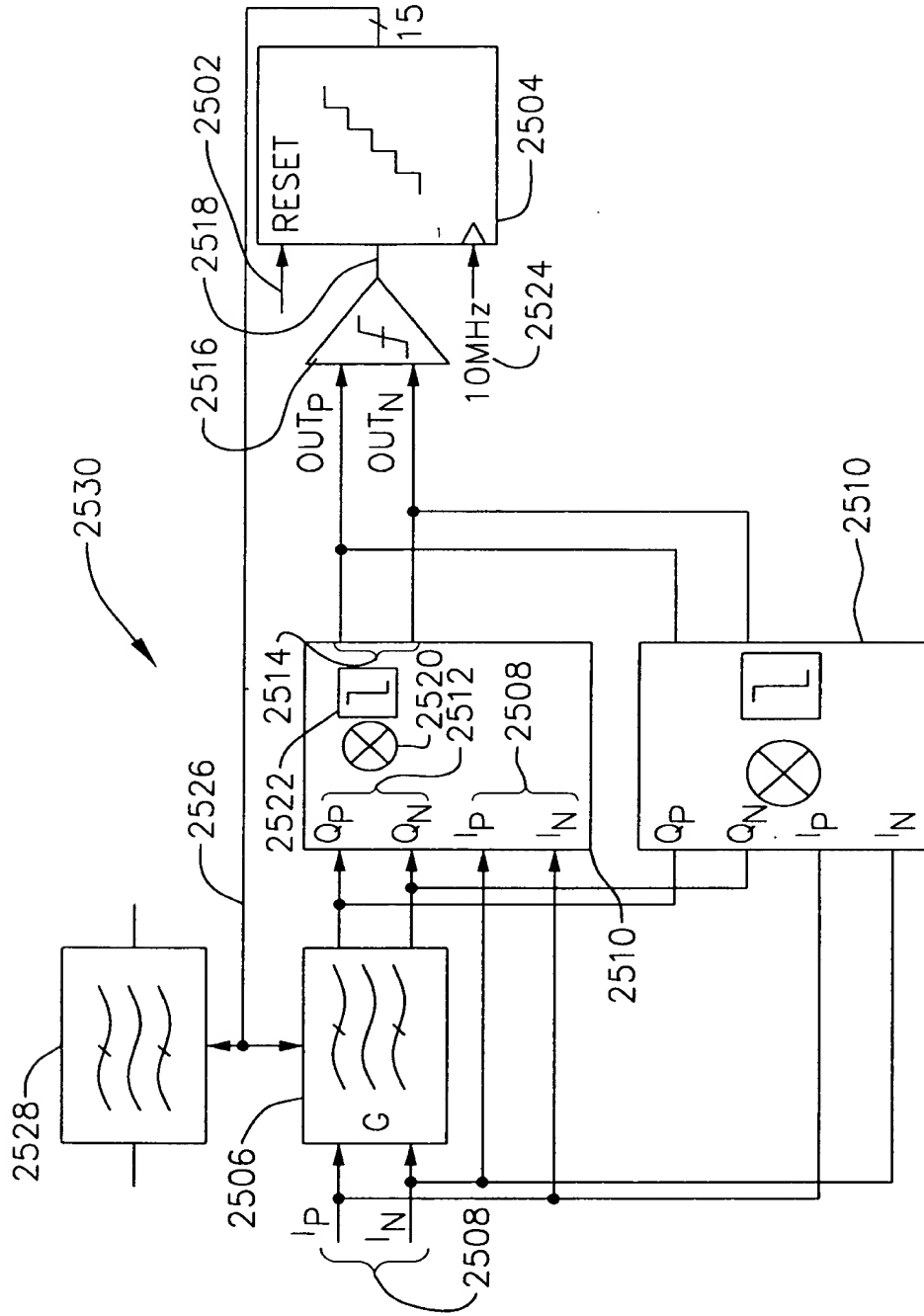
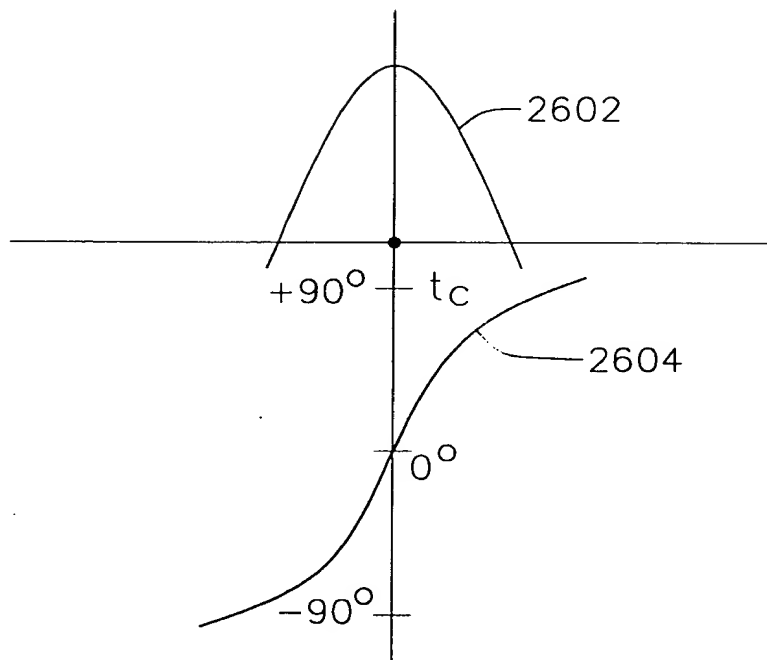


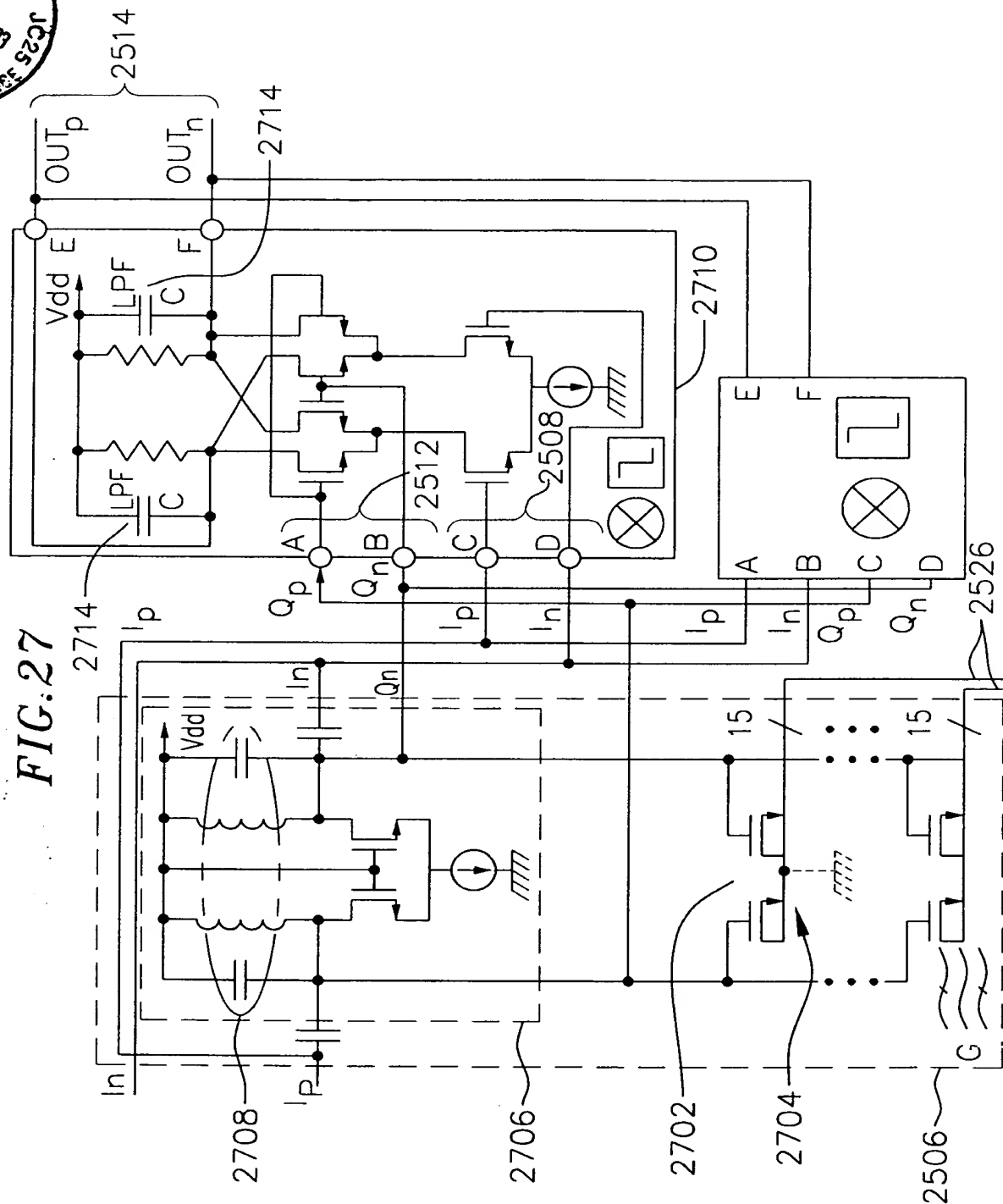


FIG. 26



A circular stamp from the Intellectual Property Office (OIPE). The text "OIPE" is at the top, "JCS-5" is on the right, "JUN 24 2003" is in the center, and "PATENT & TRADEMARK OFFICE" is at the bottom.

FIG. 27



Appl. No. 09/438,689; Filed: November 12, 1999
Dkt. No. 1875.095000C; Group Art Unit: 2817
Inventors: Ward *et al.*; Tel: 202/371-2600
Title: Differential Crystal Oscillator



FIG. 28

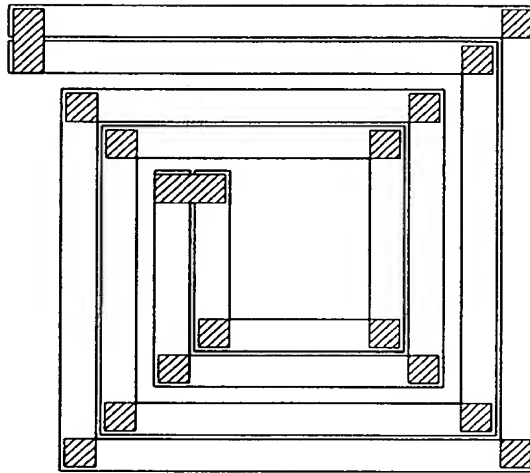




FIG. 29

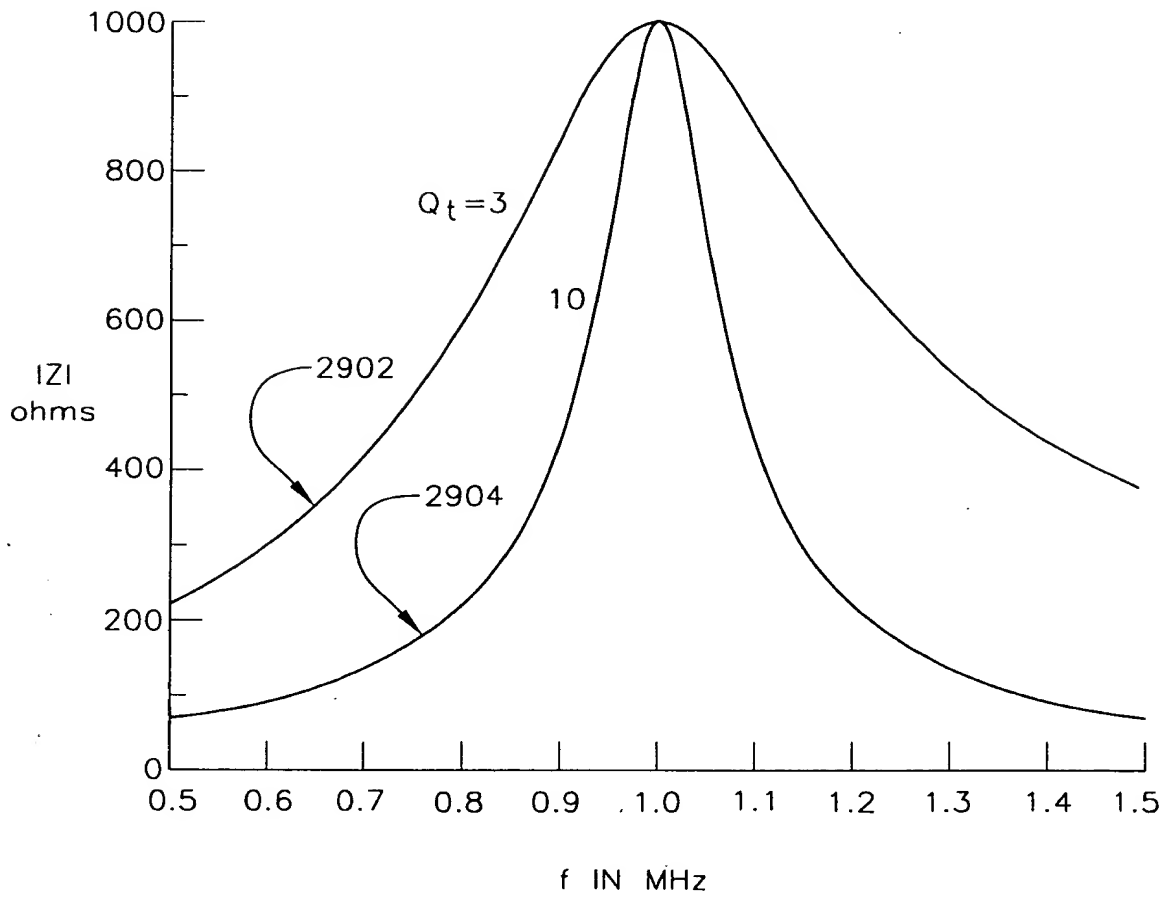




FIG. 30

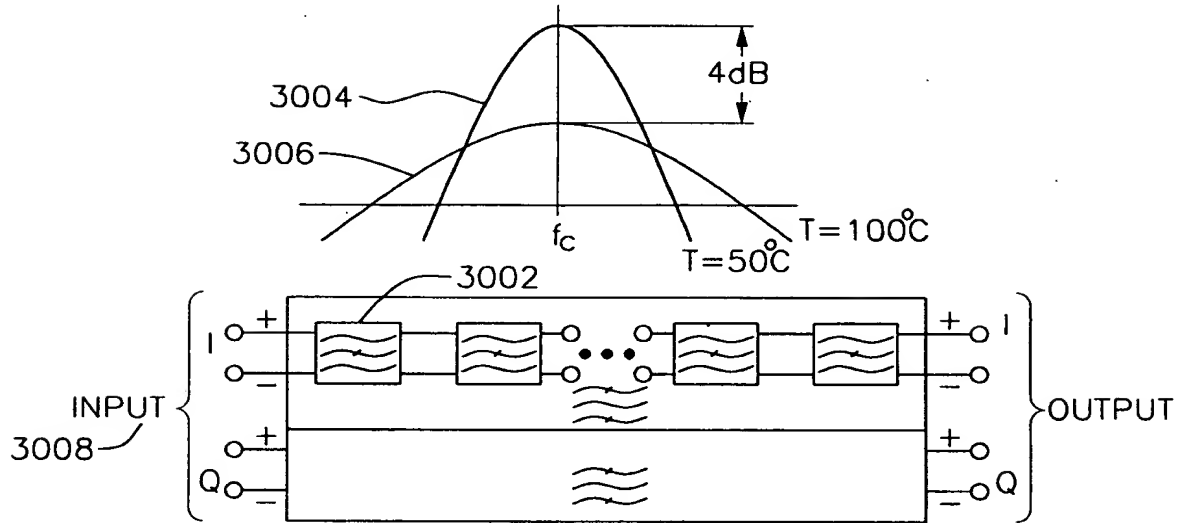
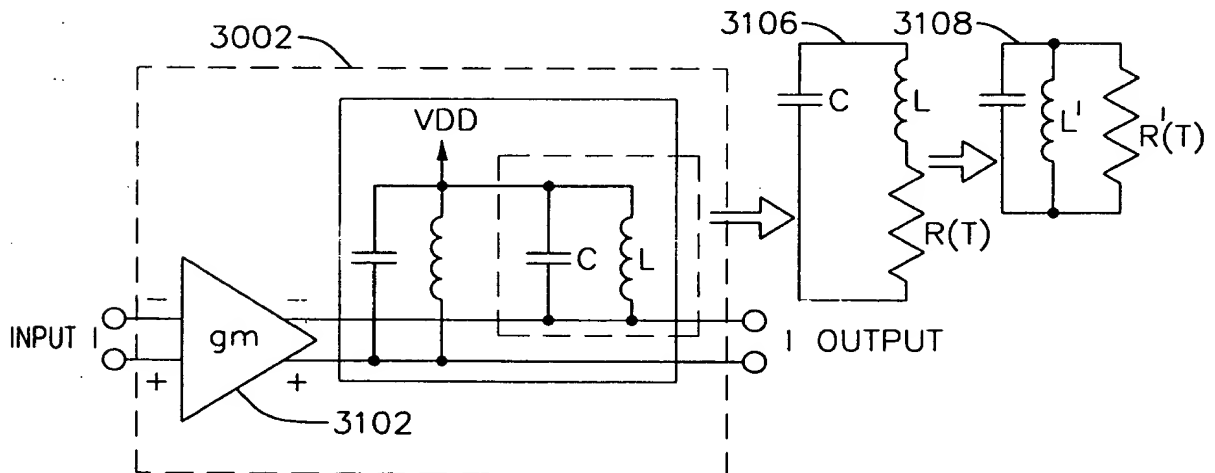


FIG. 31



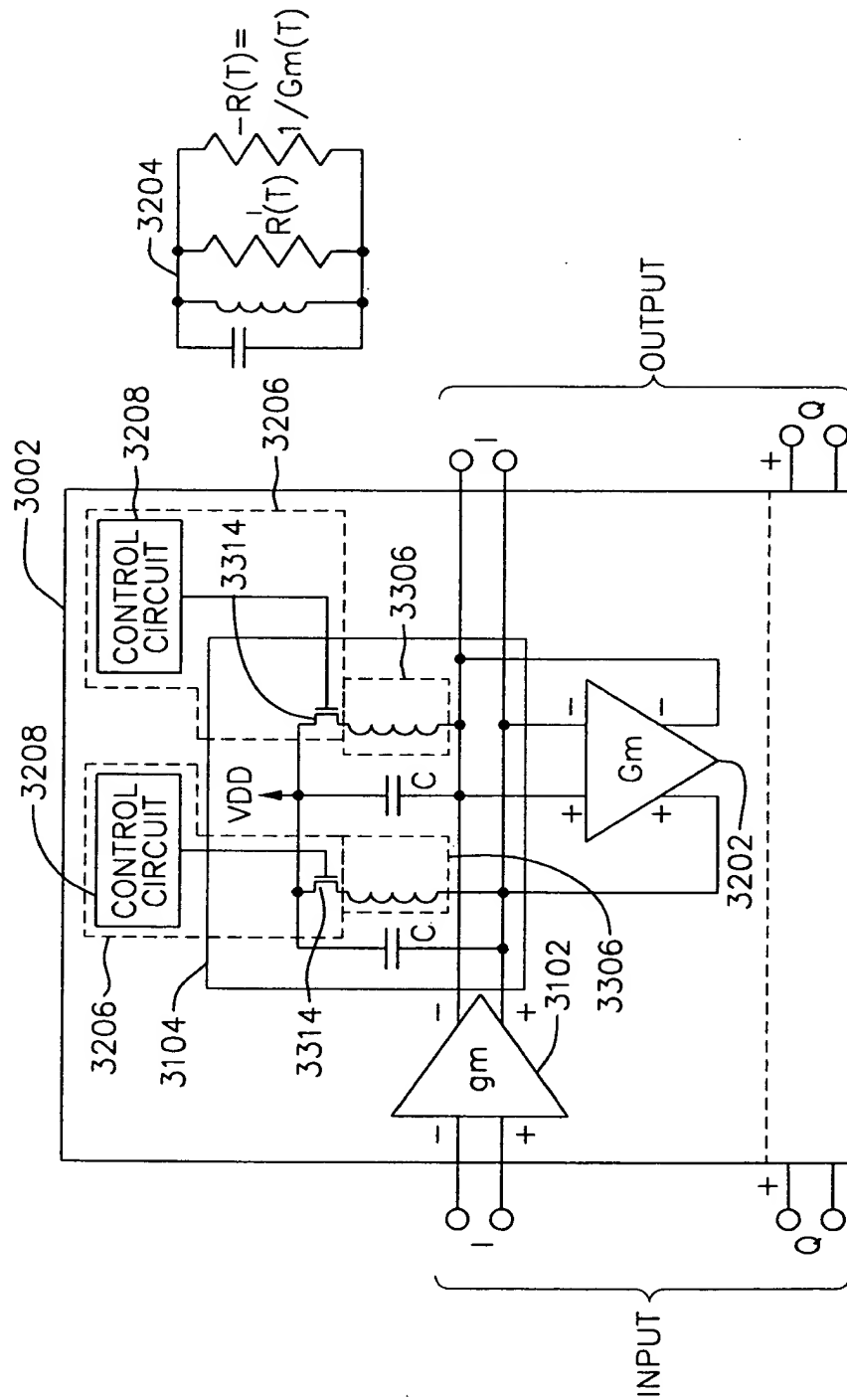
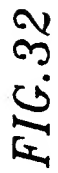




FIG. 33

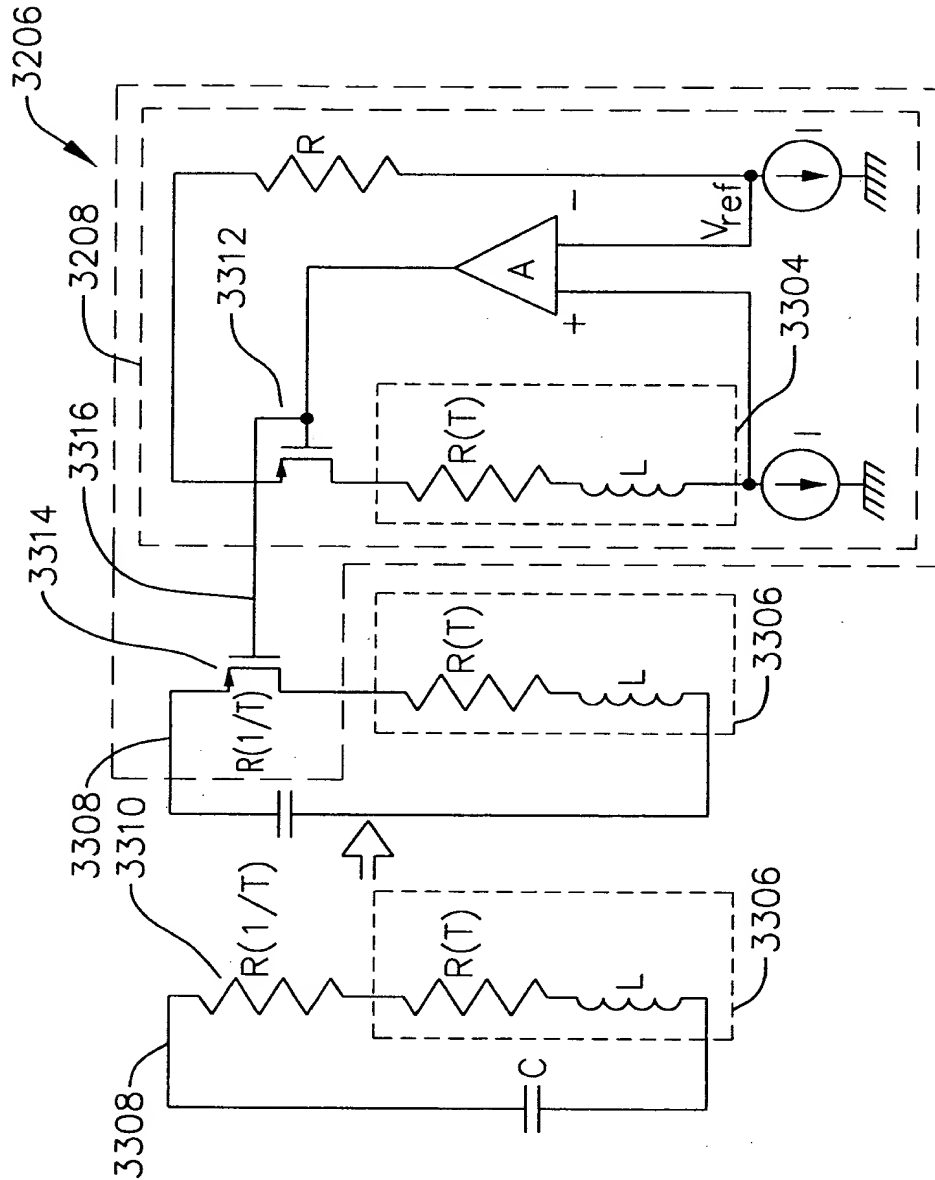




FIG.34

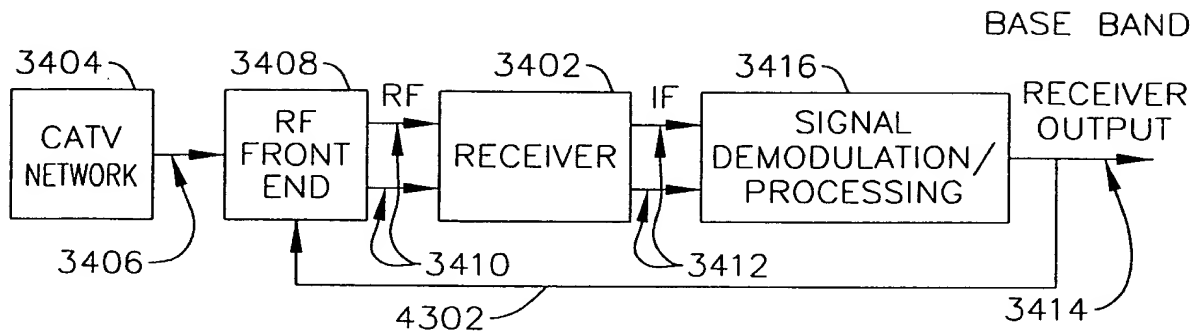


FIG.35

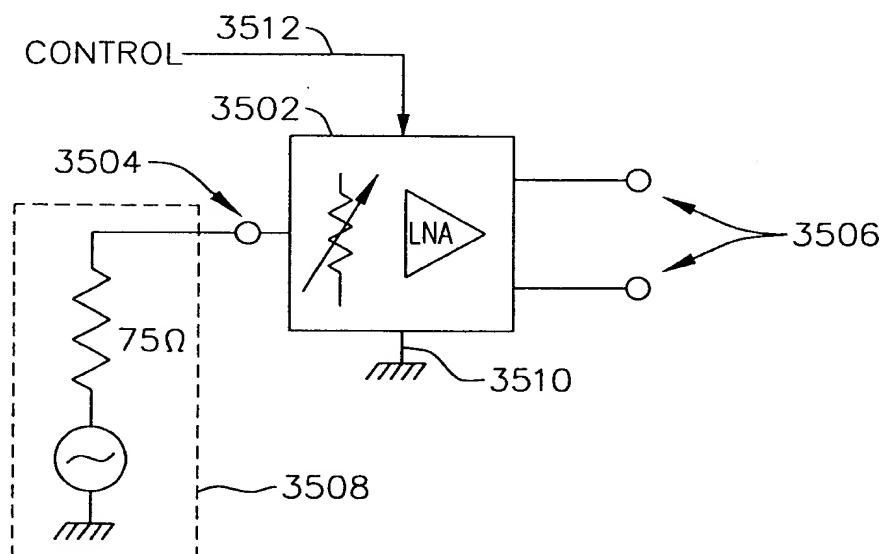




FIG. 36

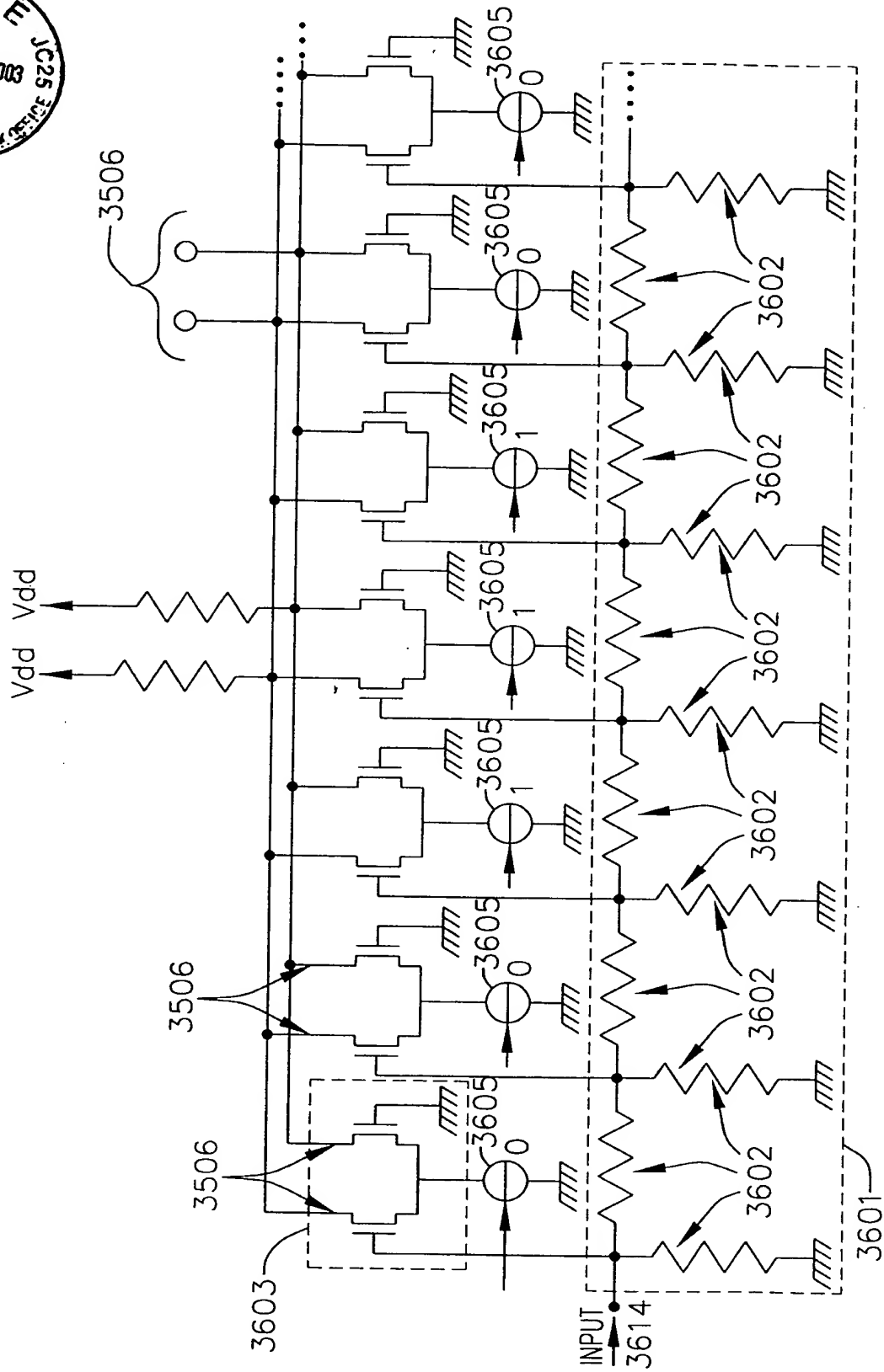




FIG. 37

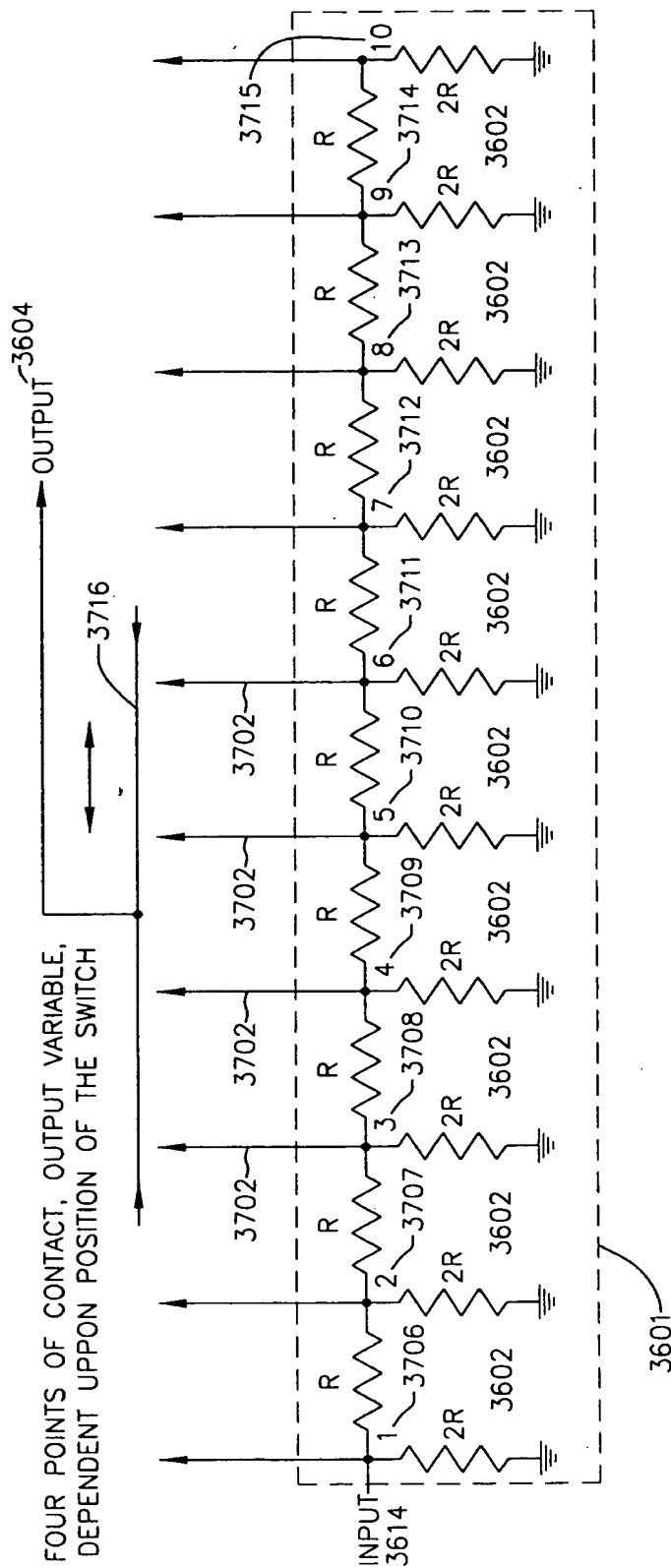




FIG. 38

PGA SETTINGS

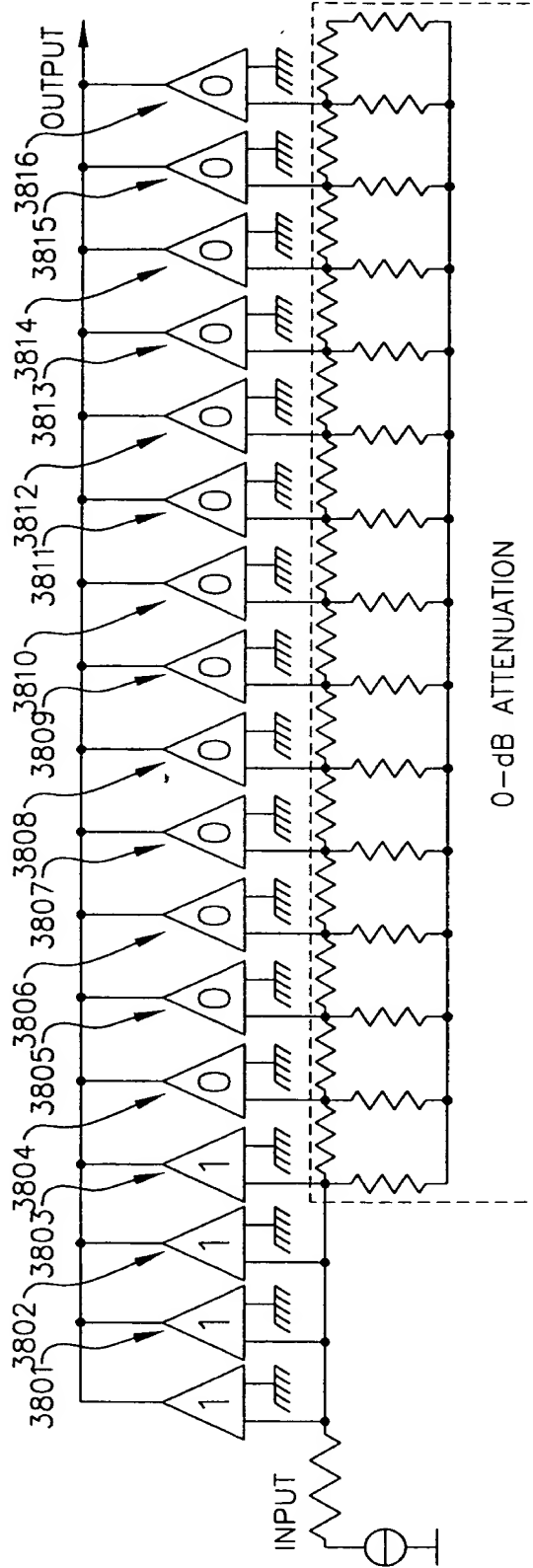




FIG. 39

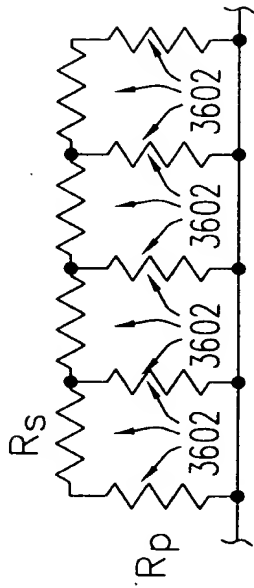


FIG. 40

PGA ARCHITECTURE

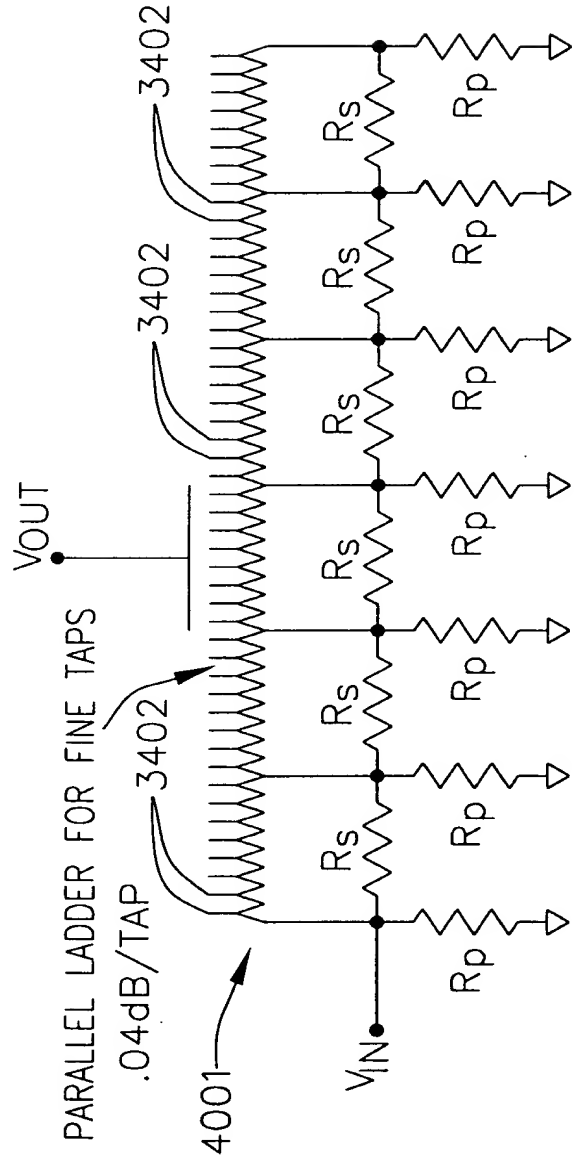




FIG. 41

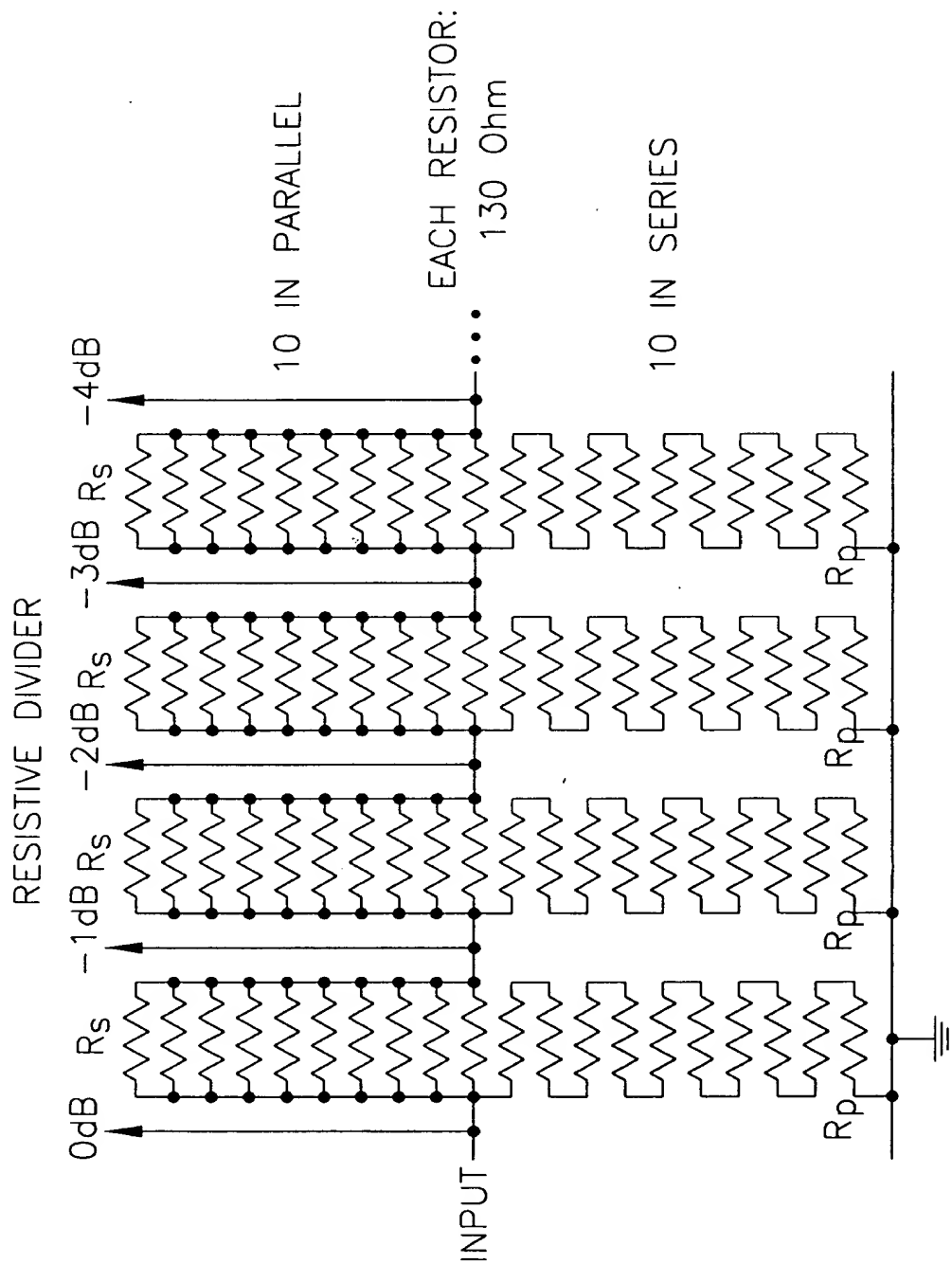




FIG. 42

NON-MONOTONICITY

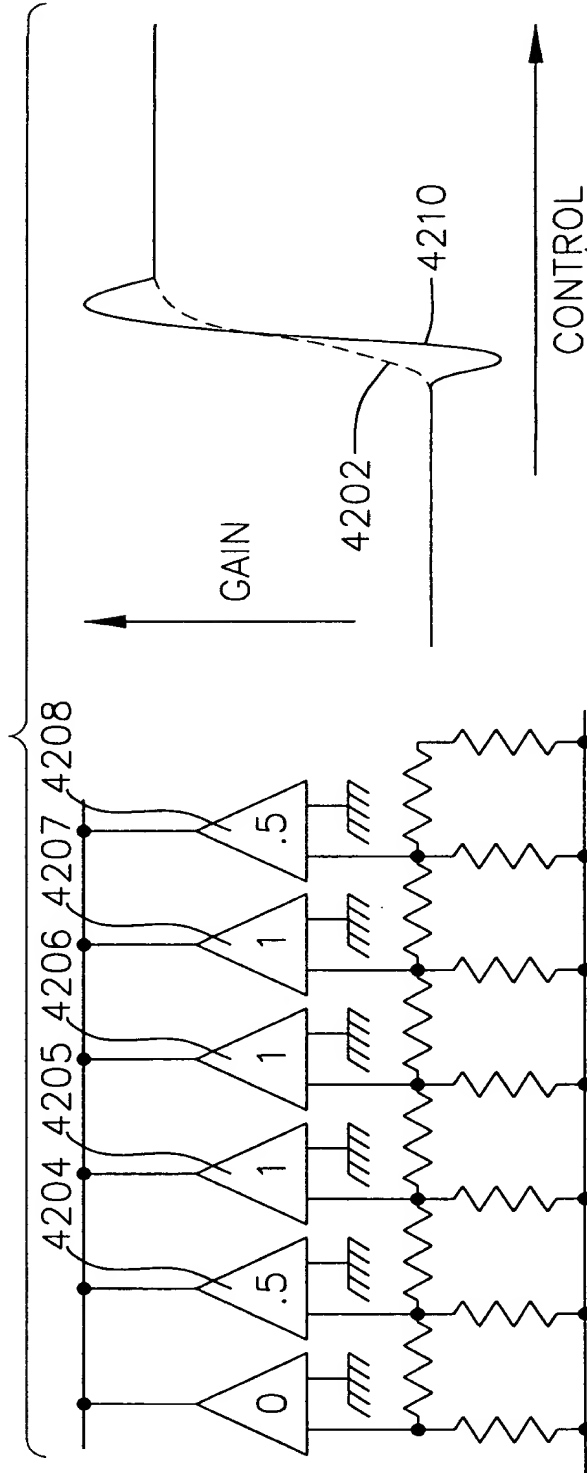
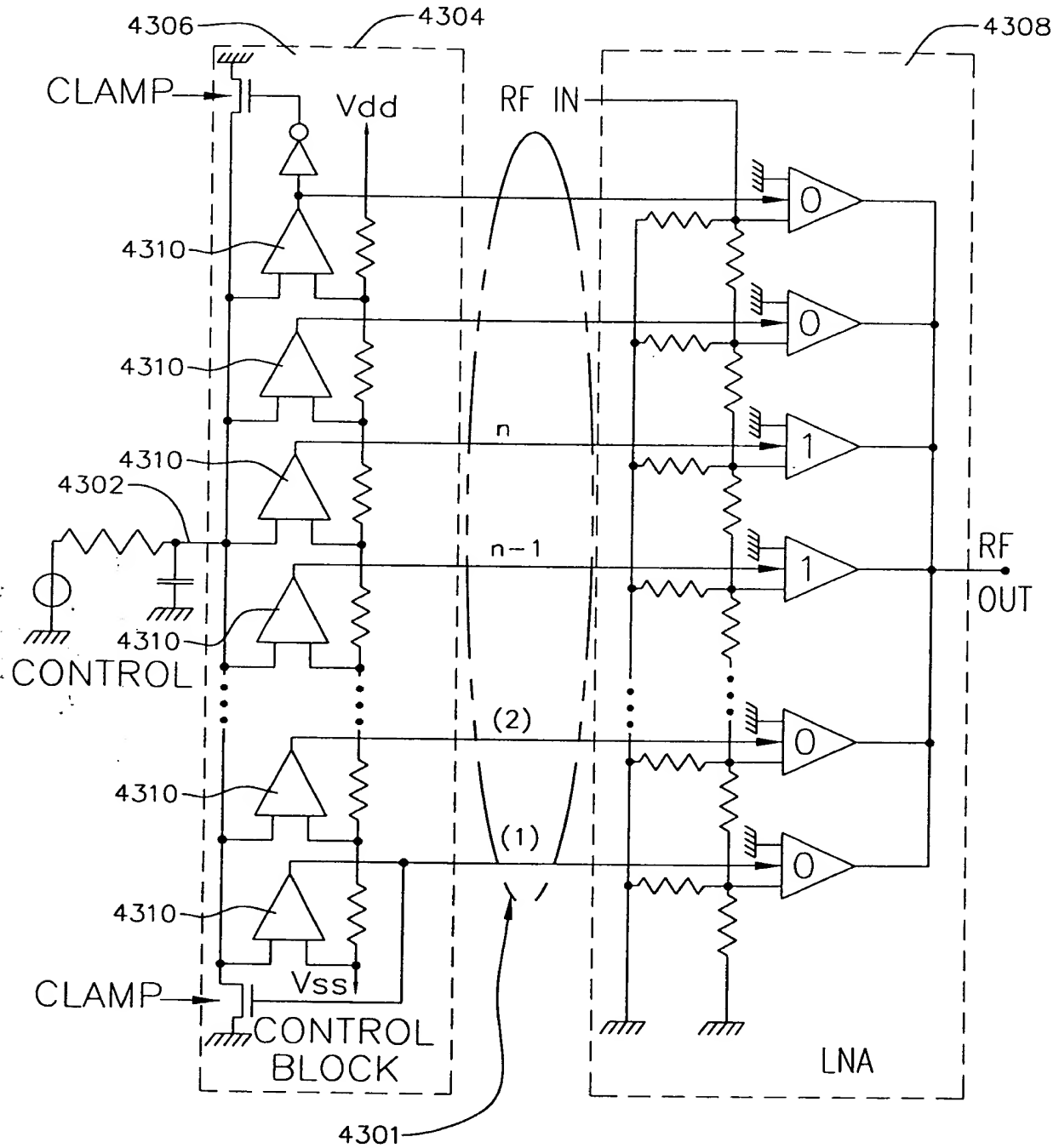


FIG. 43

CLAMPING CONTROL RANGE



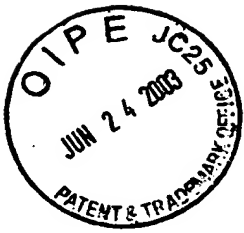
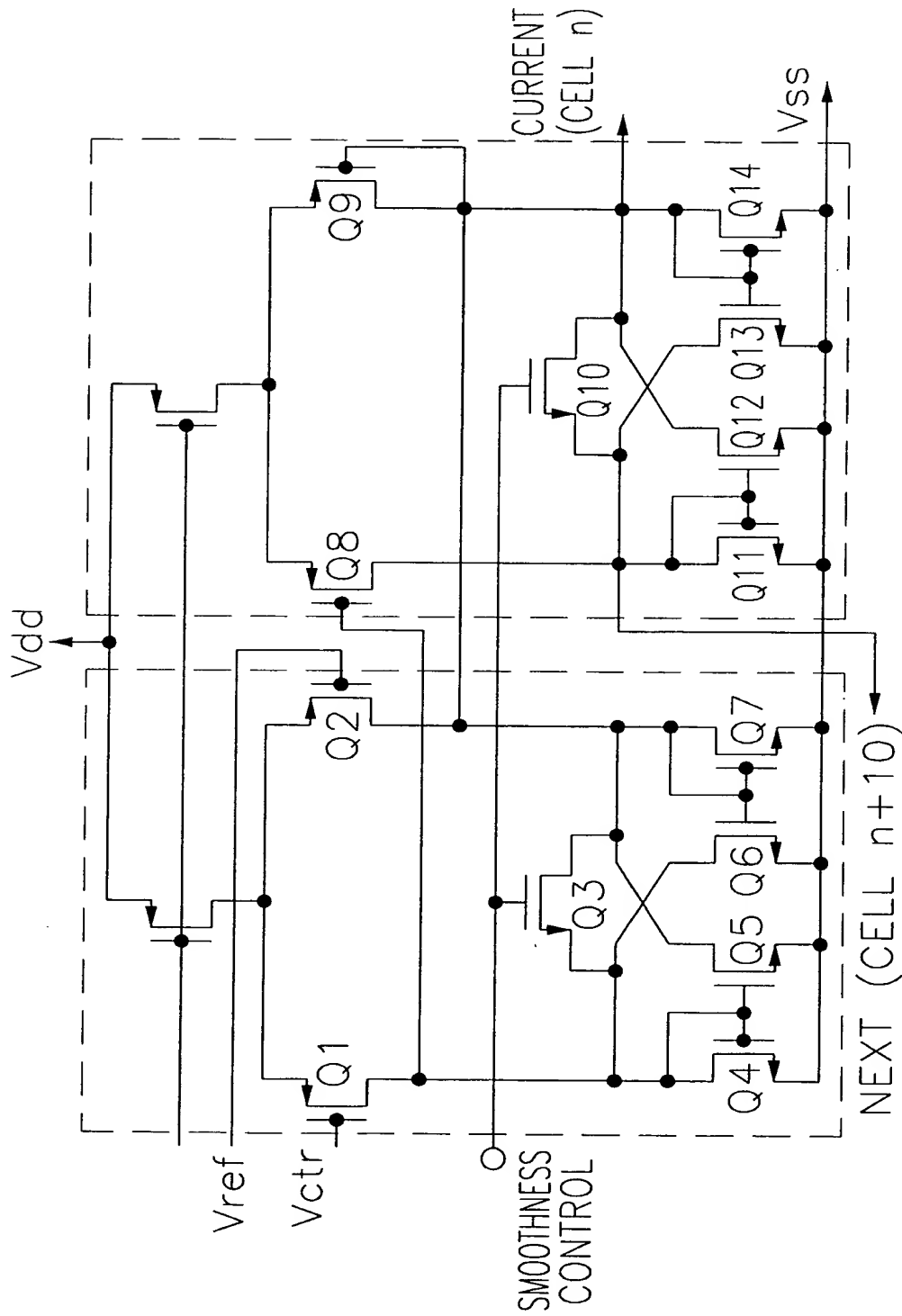


FIG. 44a
CONTROLLED GAIN COMPARATOR



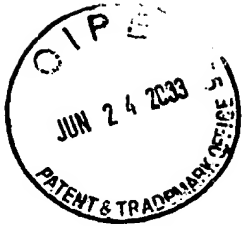


FIG. 44b

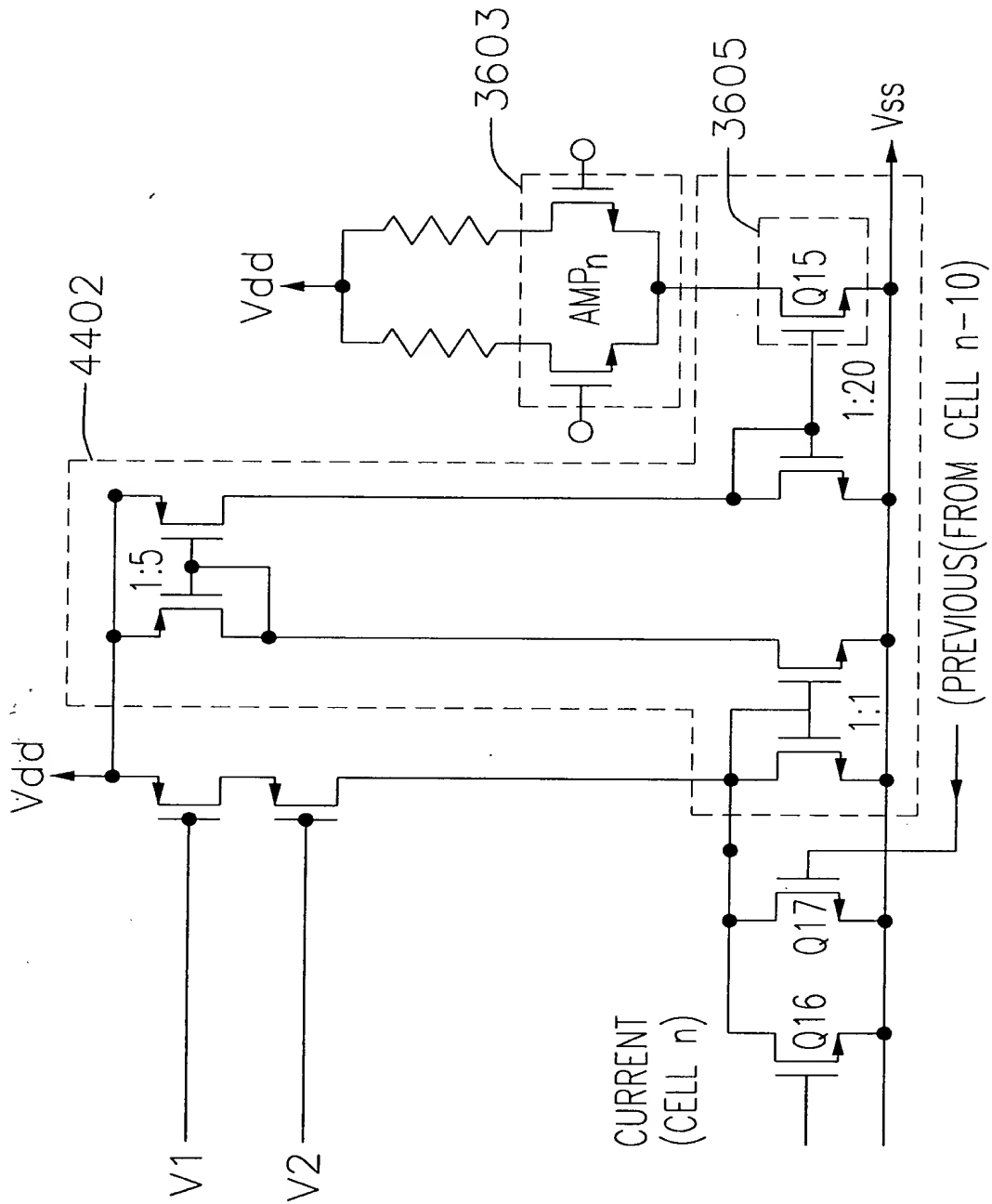




FIG. 45

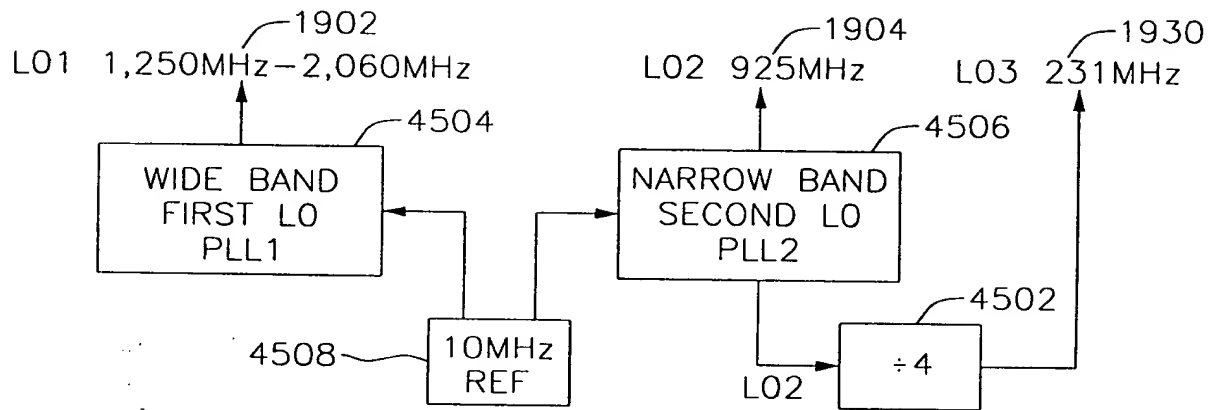




FIG. 46

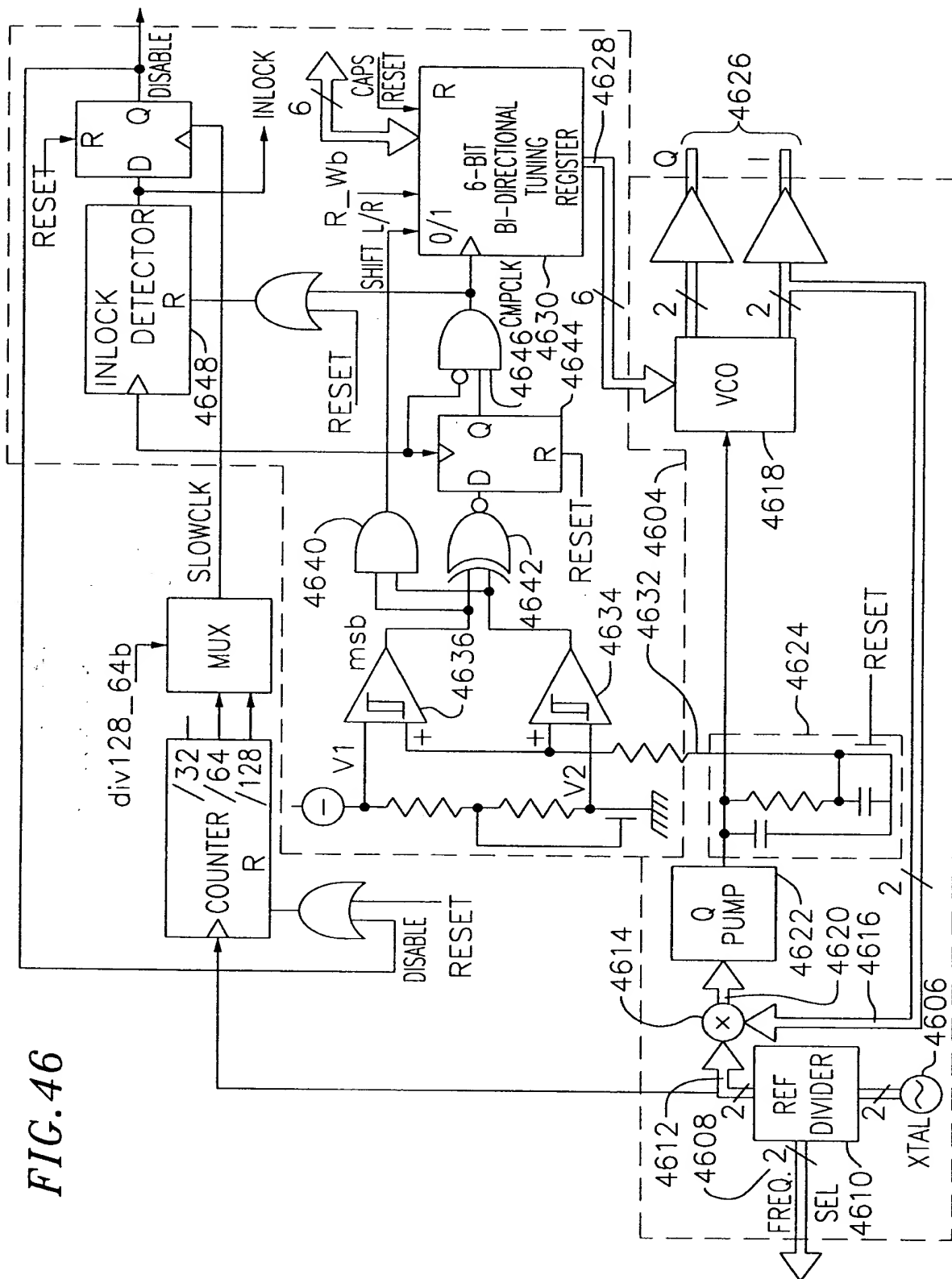




FIG. 47

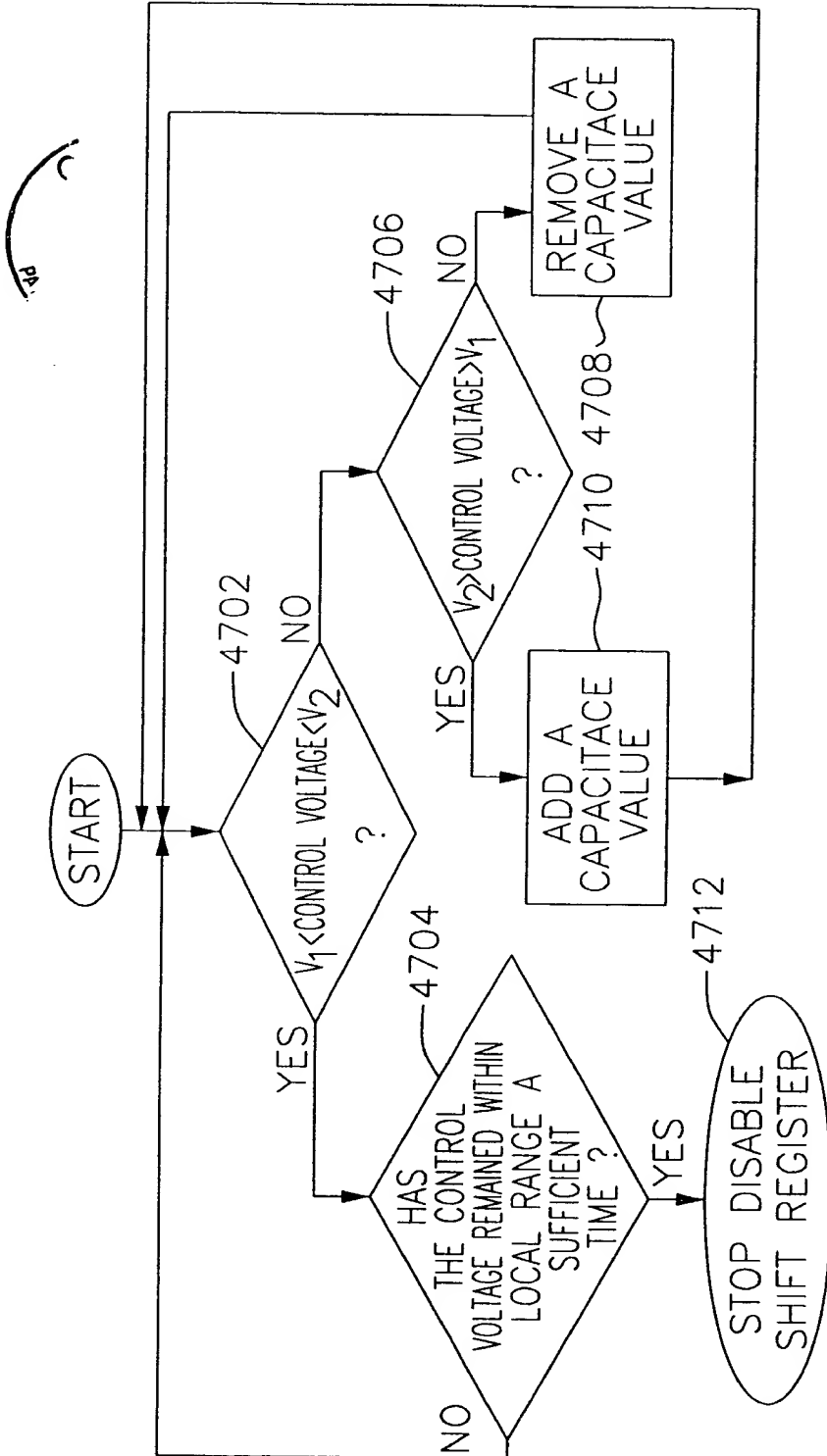




FIG. 48

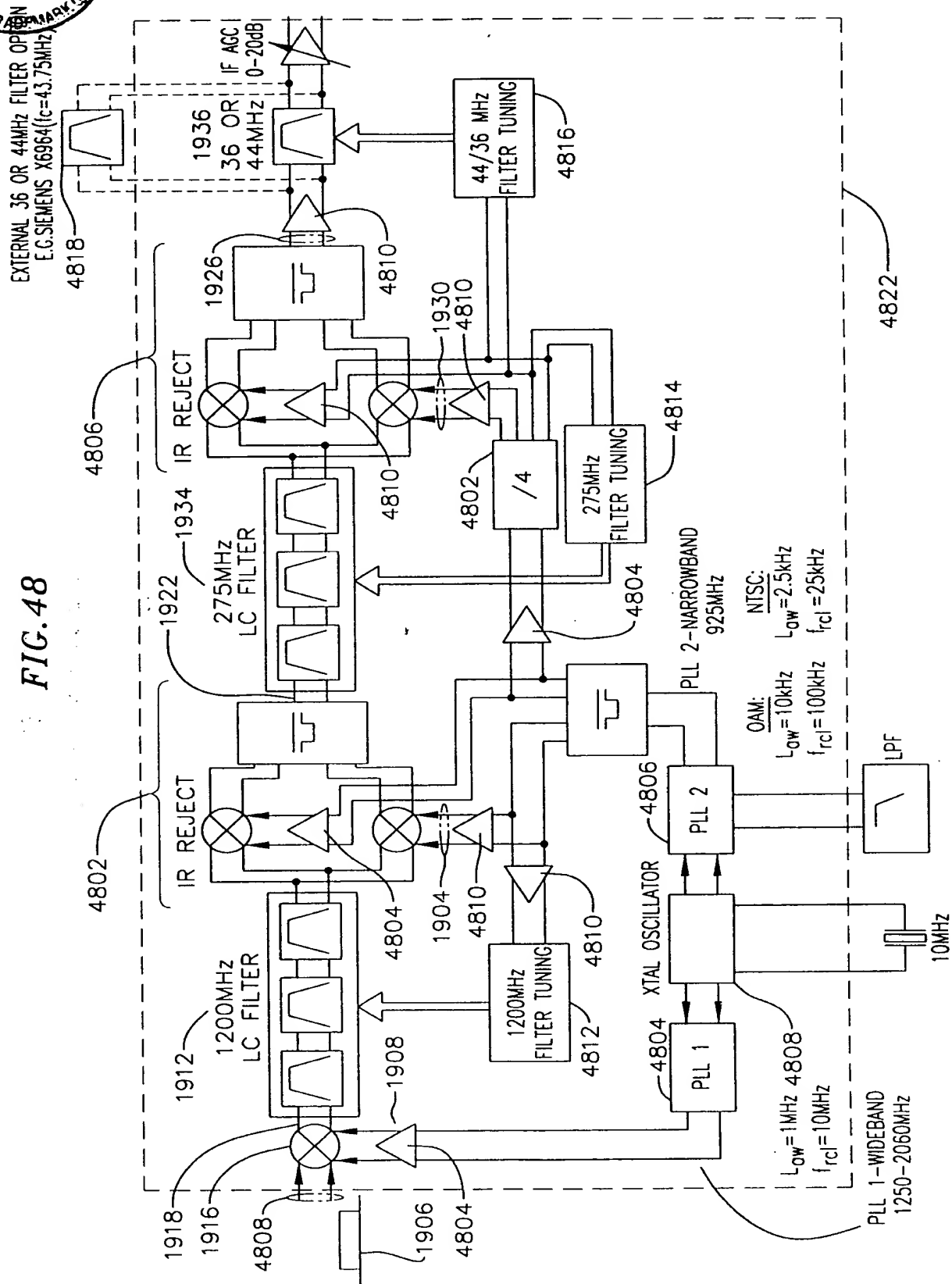




FIG. 49

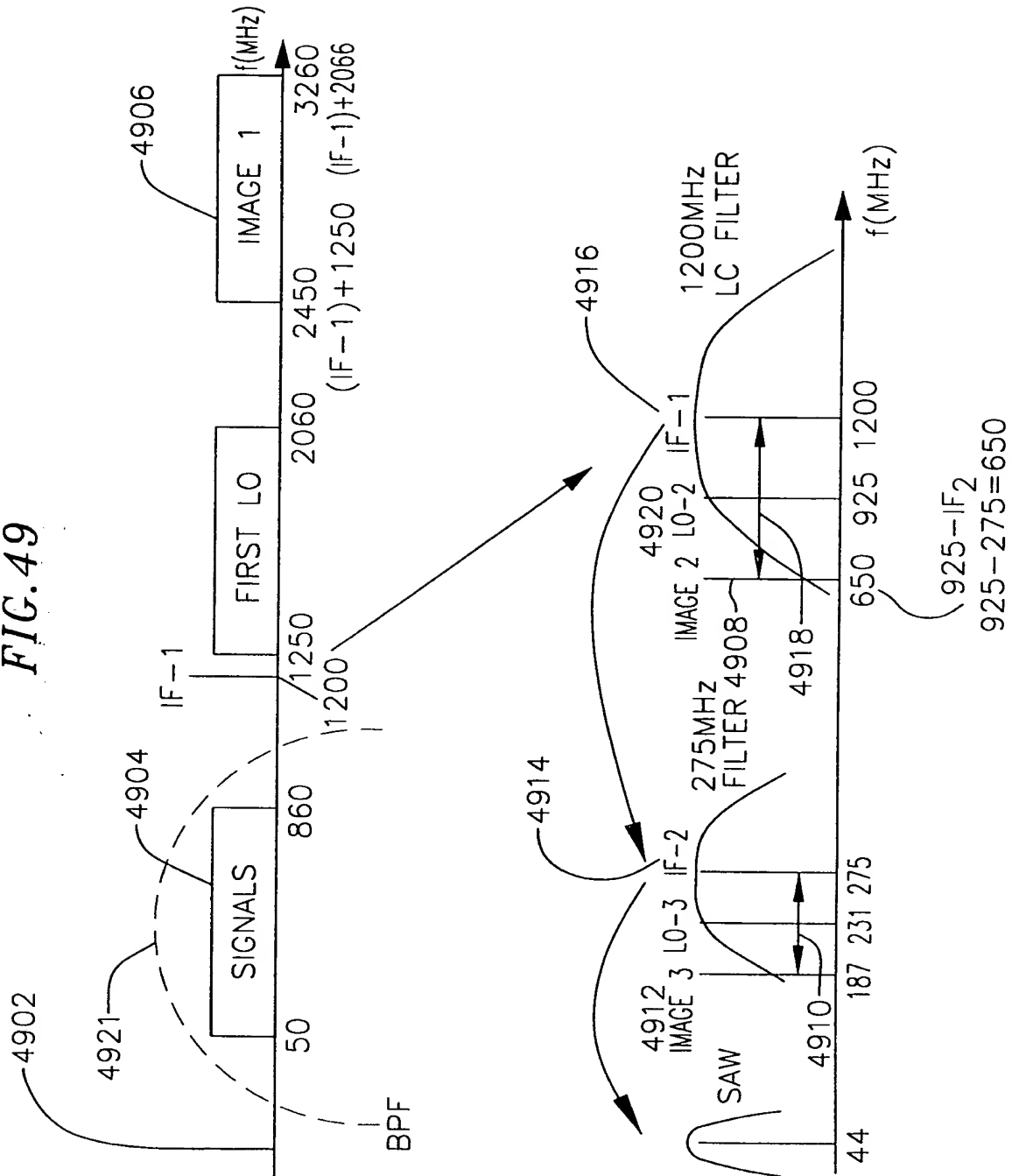
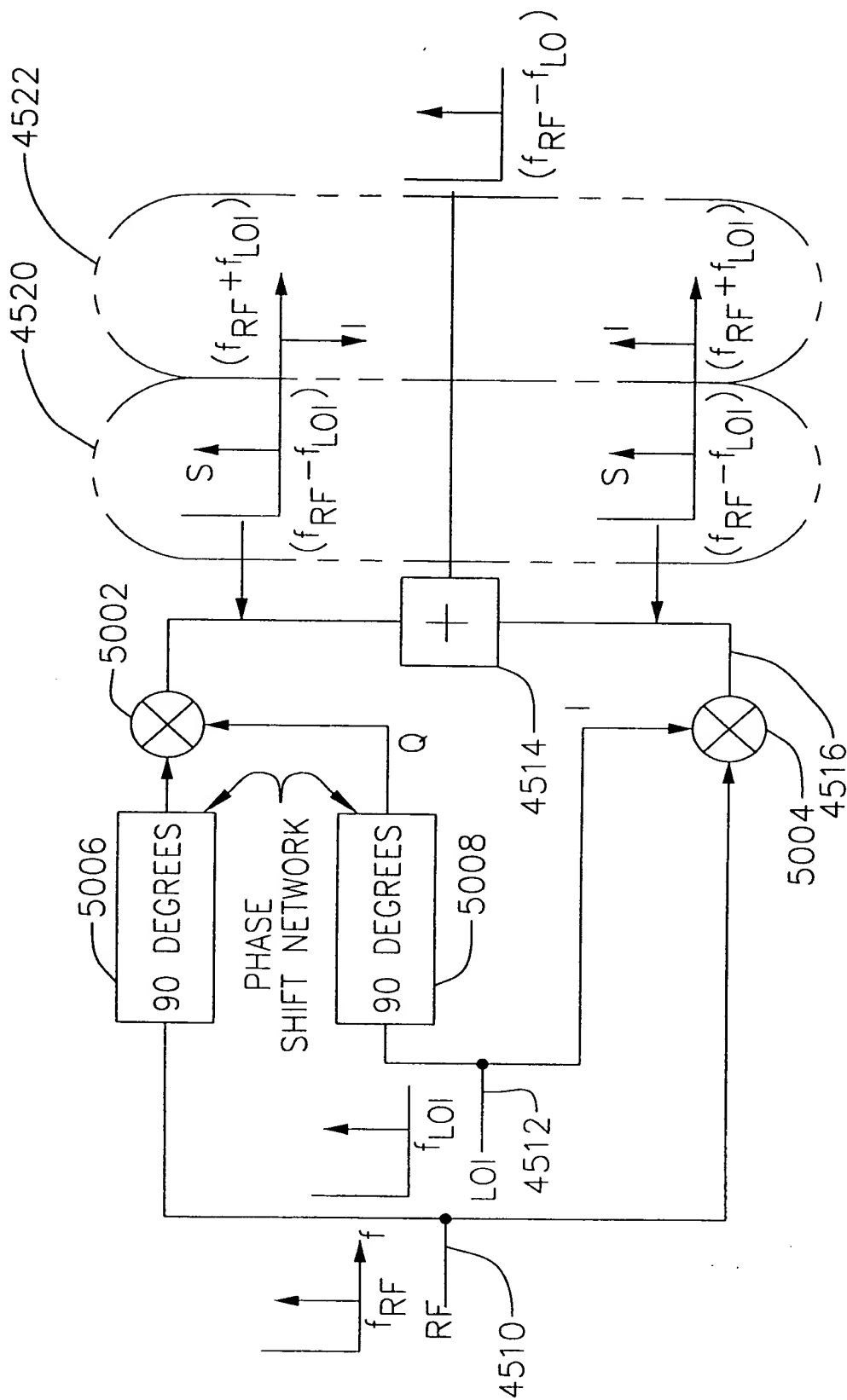
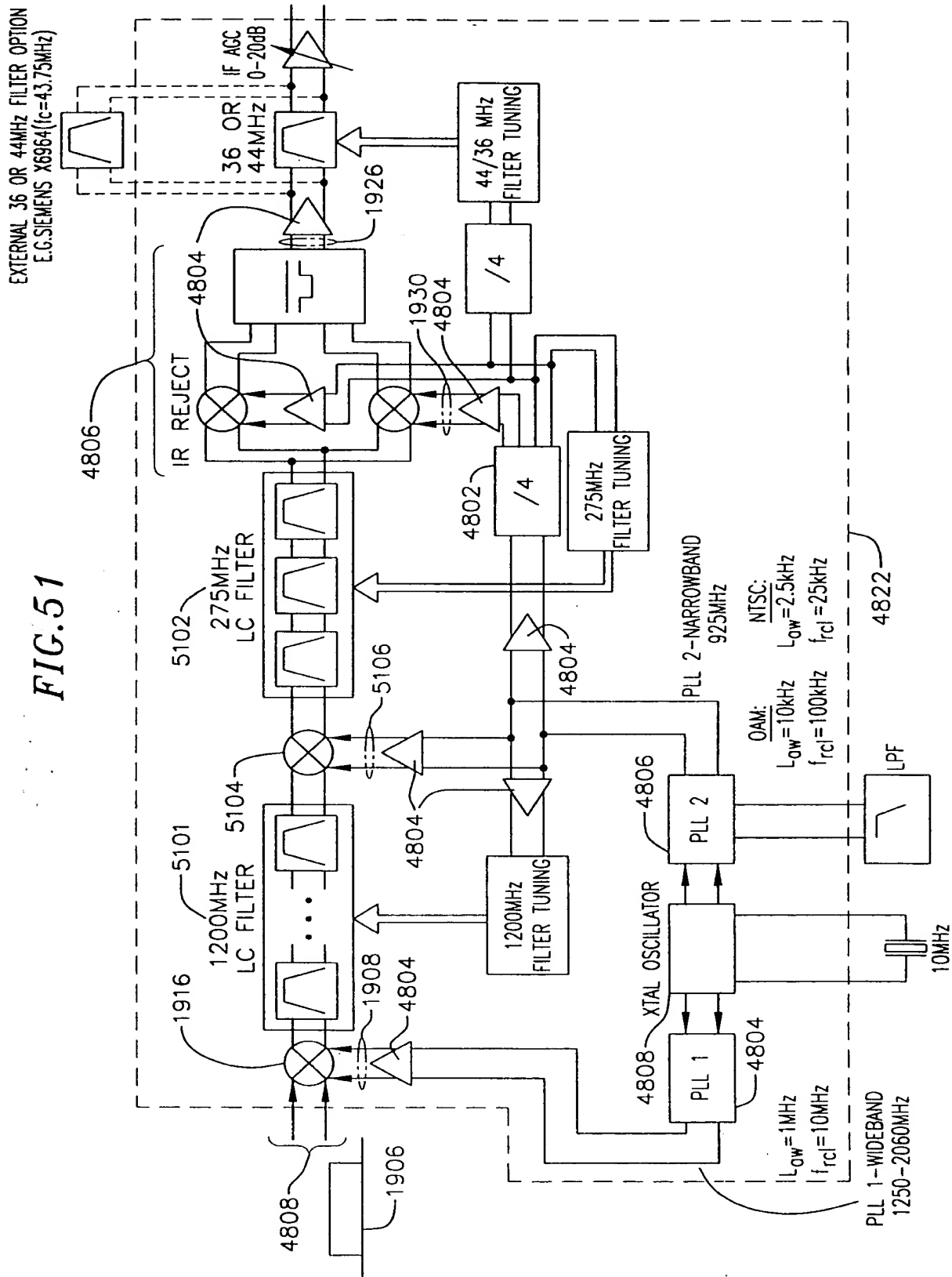




FIG. 50



EXTERNAL 36 OR 44MHz FILTER OPTION
E.G.SIEMENS X6964(f_c=43.75MHz)



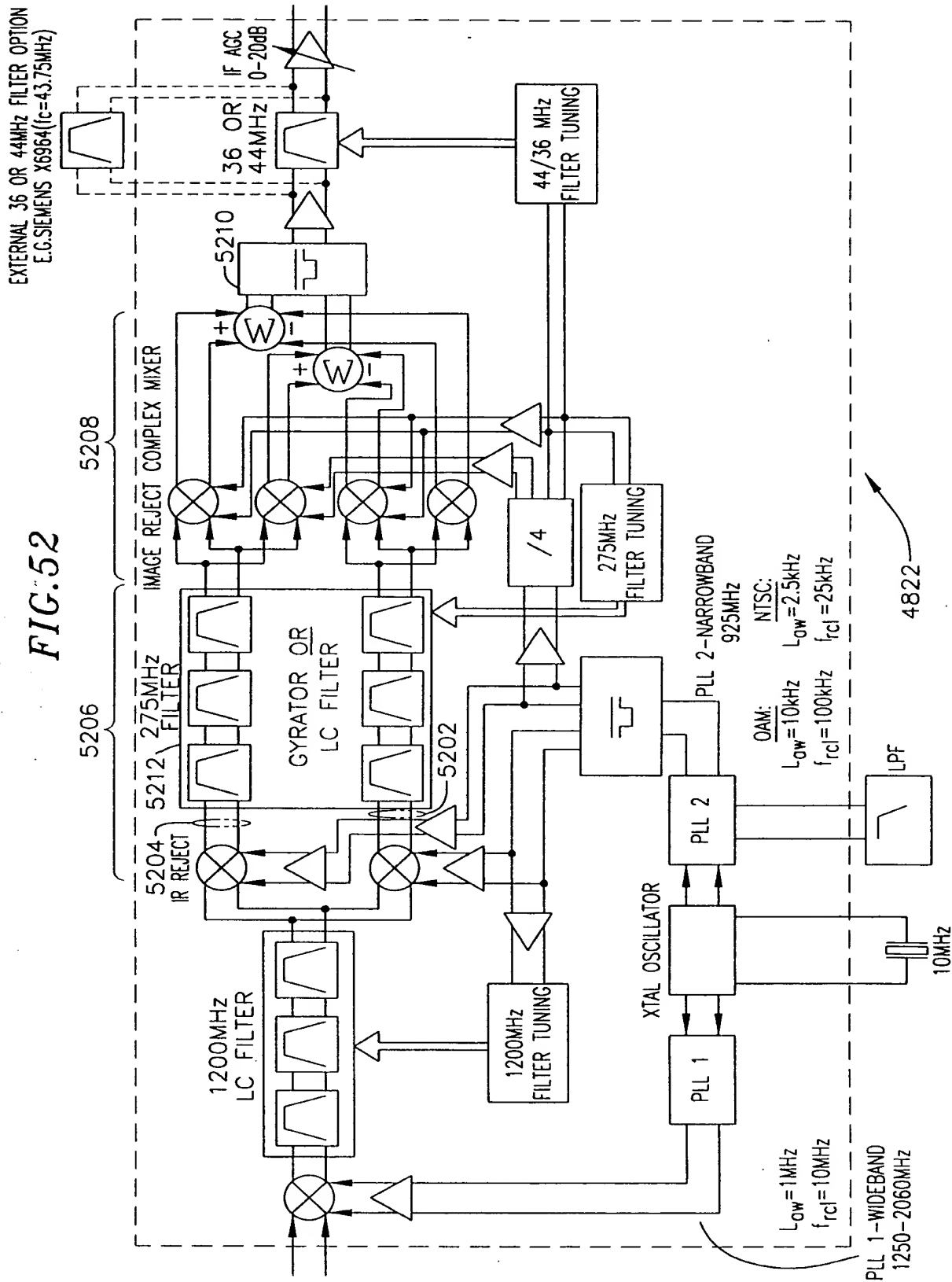




FIG. 53
CATV TUNER

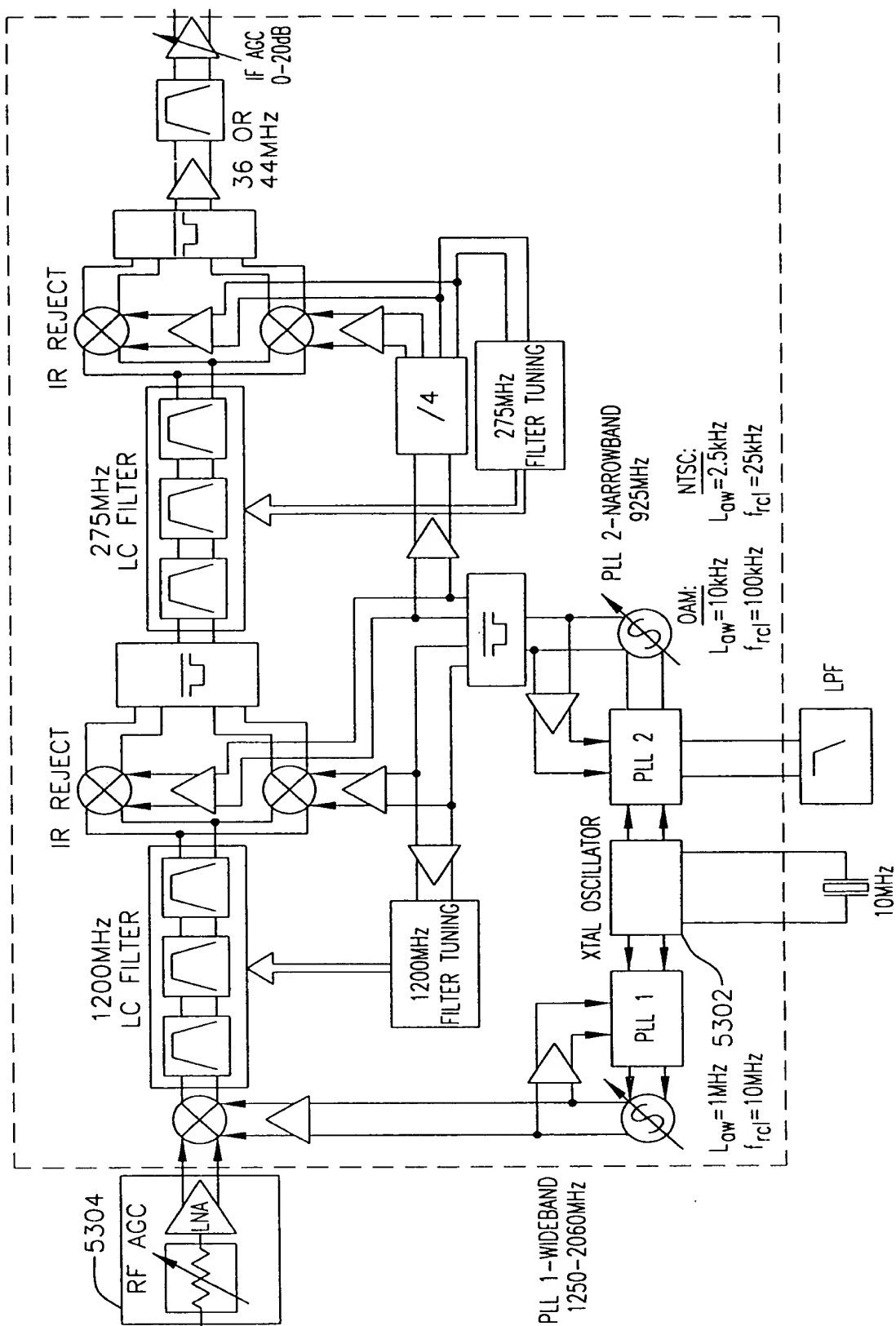




FIG. 54

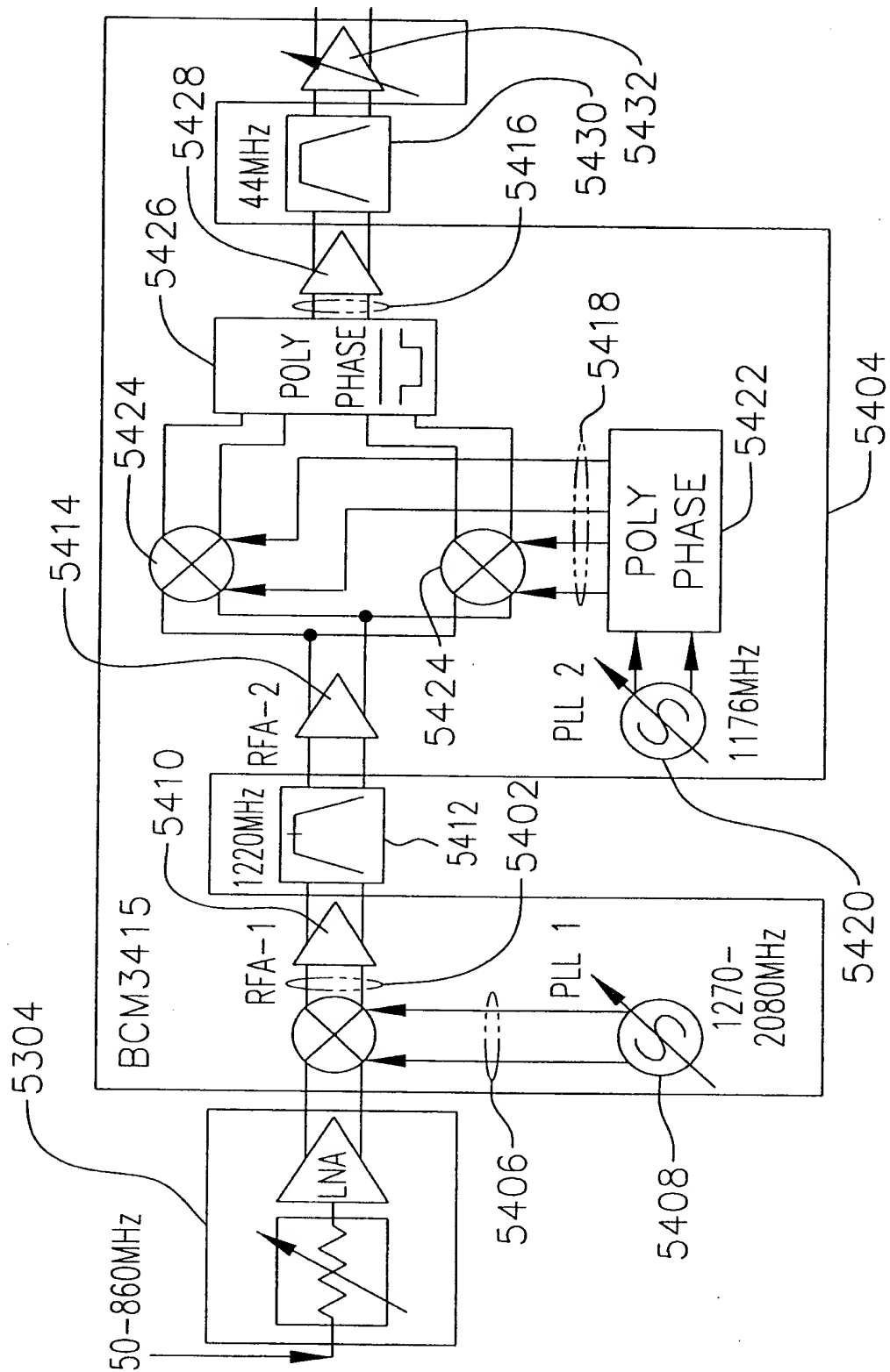
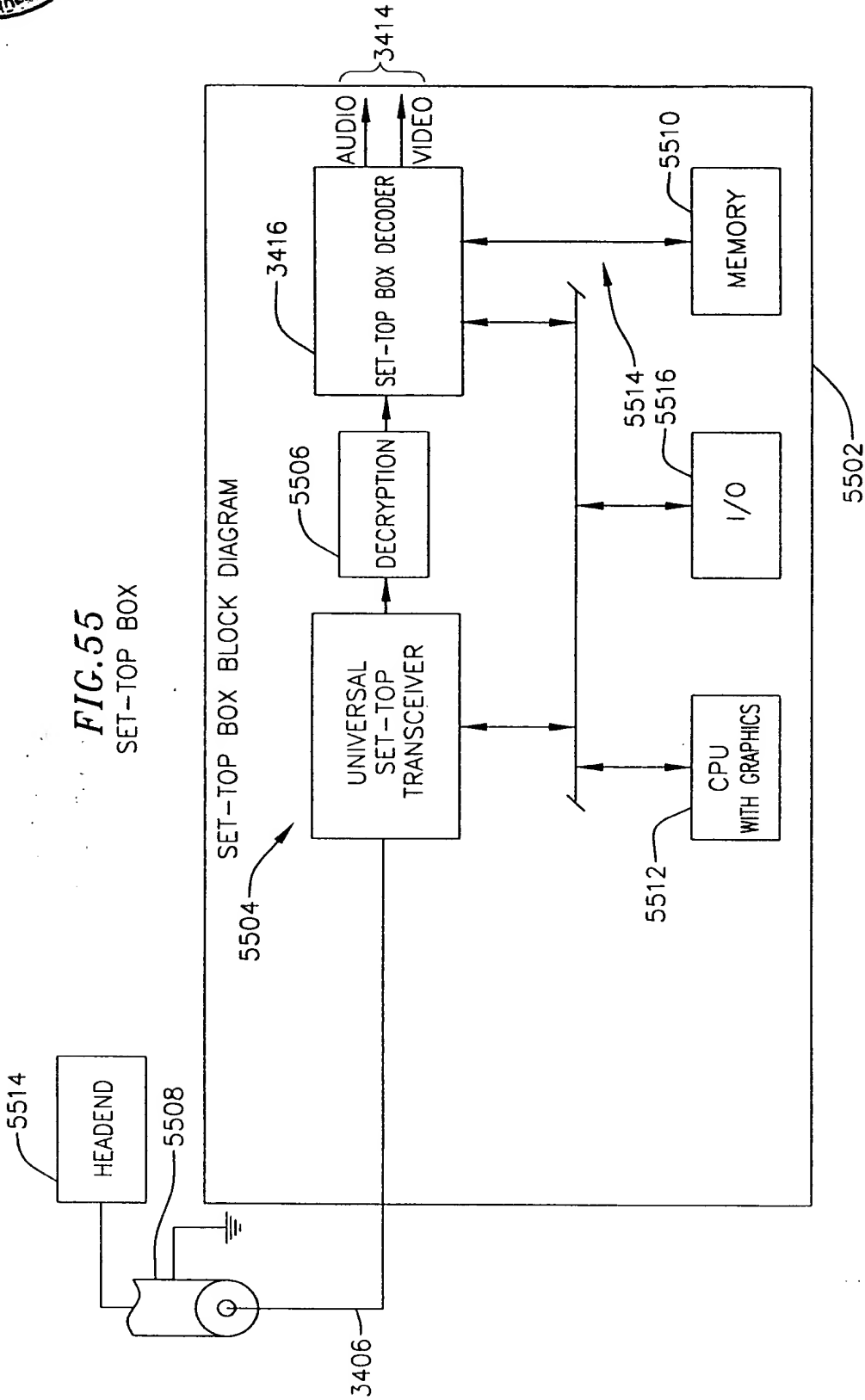




FIG. 55
 SET-TOP BOX



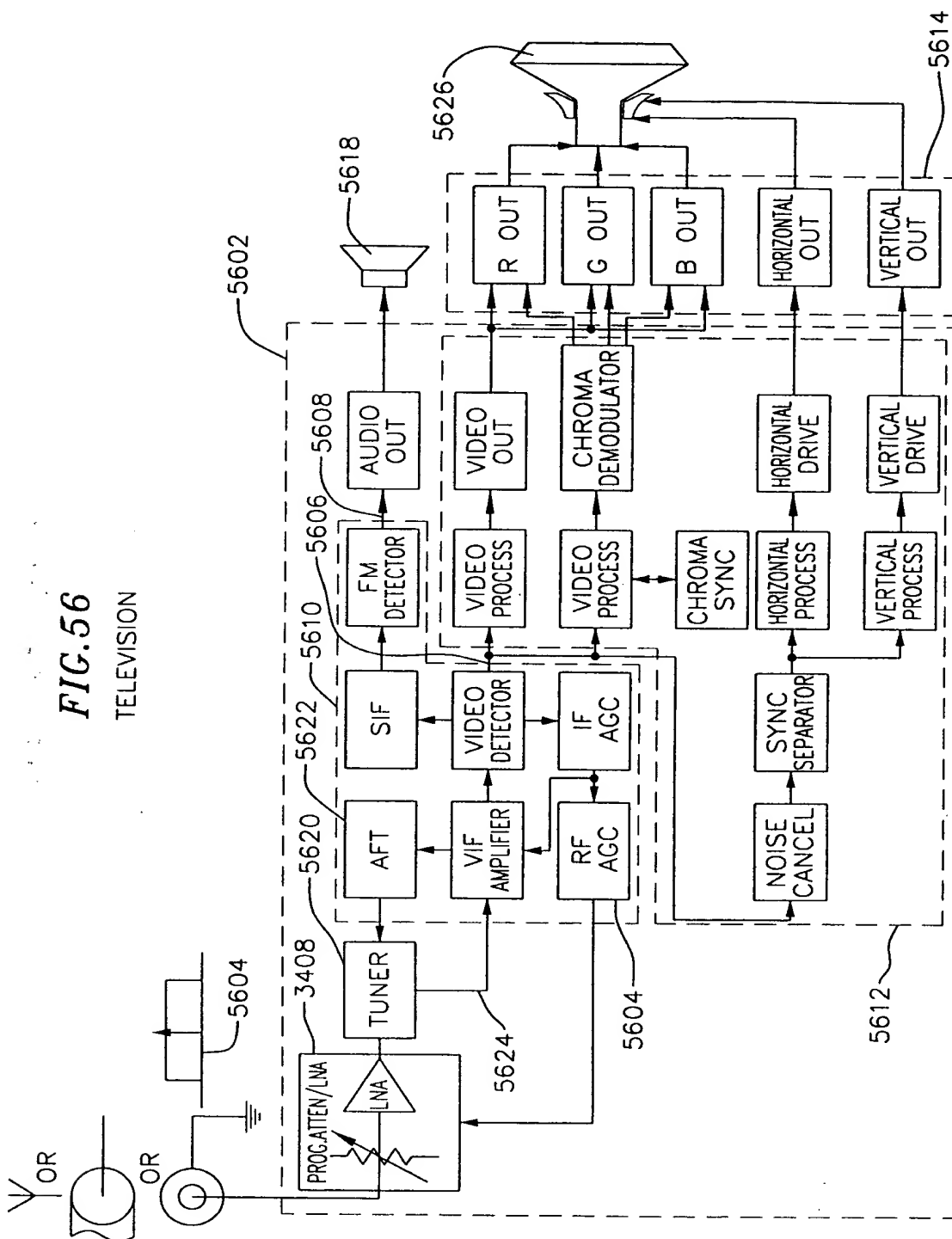




FIG. 57
 VCR BLOCK DIAGRAM

